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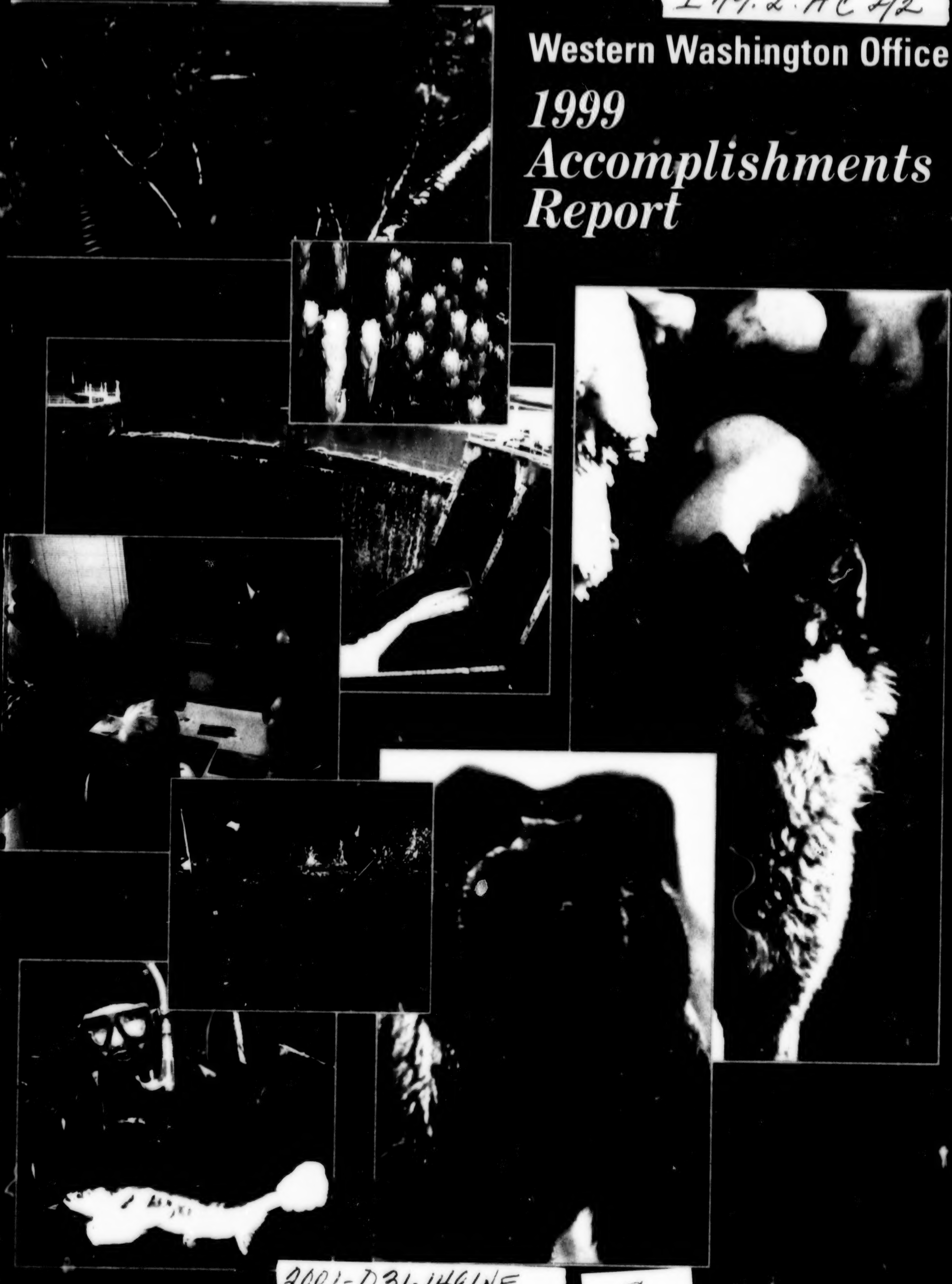
U.S. Fish & Wildlife Service

Western Washington Office

1999 Accomplishments Report



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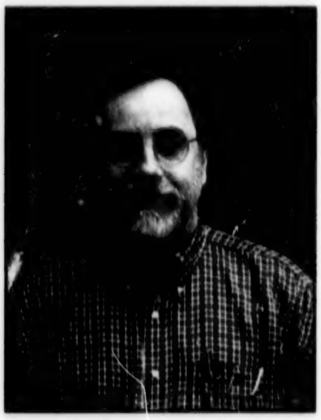

Gerry Jackson
Manager, Western Washington Office
U.S. Fish and Wildlife Service

A Year of Significant Change

The year 1999 was one of significant change for the Western Washington Office (WWO) of the Fish and Wildlife Service (FWS), especially in regards to several management and staff positions.

In April, I arrived back in the Northwest from a three and a half year stint in Washington, D.C. to assume the management of the WWO. Nancy Gloman was my Assistant Manager upon arrival at the WWO. Nancy had also served as the Acting Manager of the Western Washington Office.

Several months after my arrival, she left to take her new position as the Chief of the Fish and Wildlife Service's Endangered Species Program in Washington, D.C.

In October 1999, Sandy Noble reported as my new Assistant Manager. Sandy is a 25 year veteran of the Fish and Wildlife Service and for the past eight years, she was the Deputy Project Leader of the Fisheries Resource Office in Leavenworth, Washington. Craig Hansen was selected as the manager of the Conservation Planning Division, Alisa Ralph assumed management responsibilities for a consolidated Watershed Protection and Restoration Division, and Kate Benkert moved over from her position as manager of the Division of Northwest Forest Plan Implementation to manage the new Fisheries and Watershed Assessment Division. The remaining Division and Branch management positions will be filled early in 2000. Many new staff joined the ranks of the WWO in 1999 and we said goodbye to several staff who left to seek new challenges.

It was indeed an eventful year but throughout this period of change and uncertainty, the dedicated and exceptionally capable staff of the WWO maintained their focus and chalked up many accomplishments that significantly advanced the mission of the agency to conserve, protect and enhance fish and wildlife and their habitat for the continuing benefit of people.

In recognition of the ever changing landscape in which we operate, several structural changes in the organization were made to better align our personnel and funding to meet the challenges facing us in the coming years. The most significant changes relate to the FWS' implementation of the Ecosystem Approach to Management, which, in my view, translates into working at a landscape or watershed level with our many partners and utilizing our various scientific, policy and legal tools to carry out the mission of our agency. If we are to be successful in carrying out the mission of our agency, we must work collaboratively with other federal agencies, state agencies, tribes, city and county governments, local grass-roots organizations, industry, developers, environmental groups, small and large landowners, and individuals in each watershed. We cannot accomplish our mission alone. In other words, all stakeholders must be engaged in the process and, ultimately, we must shift our focus from the species by species and project by project reactive approaches to pro-active approaches involving watershed planning that will enable us to work more efficiently and effectively to help protect the biodiversity of the great Northwest.

There are many challenges facing us as we open the door to a new year, new century and new millennium. But we are optimistic that we will help turn the tide of habitat loss and degradation, end the need to place plants and animals on the list of threatened and endangered species, and recover currently listed species. Rapid human population increases in the Puget Sound area are putting increasing pressure on our resources and the recent listing of the Puget Sound Distinct Population Segment of bull trout, along with the listings of salmon by the National Marine Fisheries Service, has awakened many in western Washington to the crises that our watersheds are facing. Fish species, such as bull trout, are sensitive indicators of watershed health and, when they are put on the endangered species list, they signal us that serious problems exist that must be resolved to avoid ecosystem collapse.

There is a also a growing awareness in the general populace of the interrelatedness of habitat quantity and quality, fish, wildlife and plant species viability and human health and economic prosperity. Encouragingly, individual citizens are increasingly involved in species recovery and habitat restoration activities. Our challenge in the coming years is to facilitate these efforts by providing scientific expertise, clear statements of expectations for species and watershed recovery, regulatory and financial incentives, and leadership. Working together with our many partners, we can reach our goal of achieving healthy watersheds.

This report attempts to articulate highlights from the many activities and accomplishments of the Western Washington Office of the Fish and Wildlife Service during 1999 and lays out some of the challenges that lie ahead for each of our programs. We will build on our record of accomplishment and strive to provide the best service possible to our many constituents, while remaining strong advocates for the resources that have been entrusted to us by the American Public to conserve and protect. Your support is greatly appreciated and we look forward to working together in the future to protect and conserve the wonderful natural resource heritage that is fundamental to our quality of life in the Pacific Northwest.

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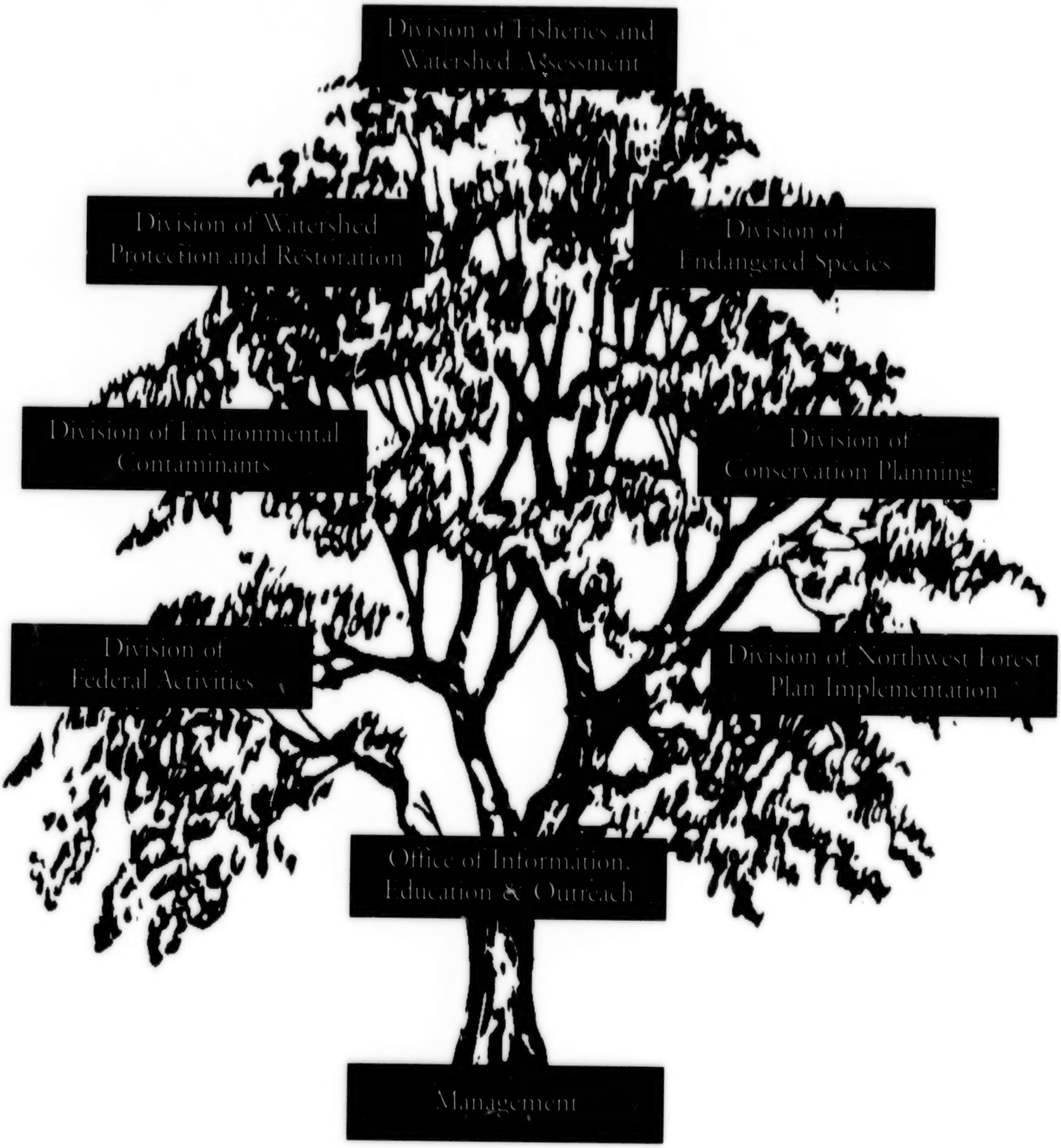
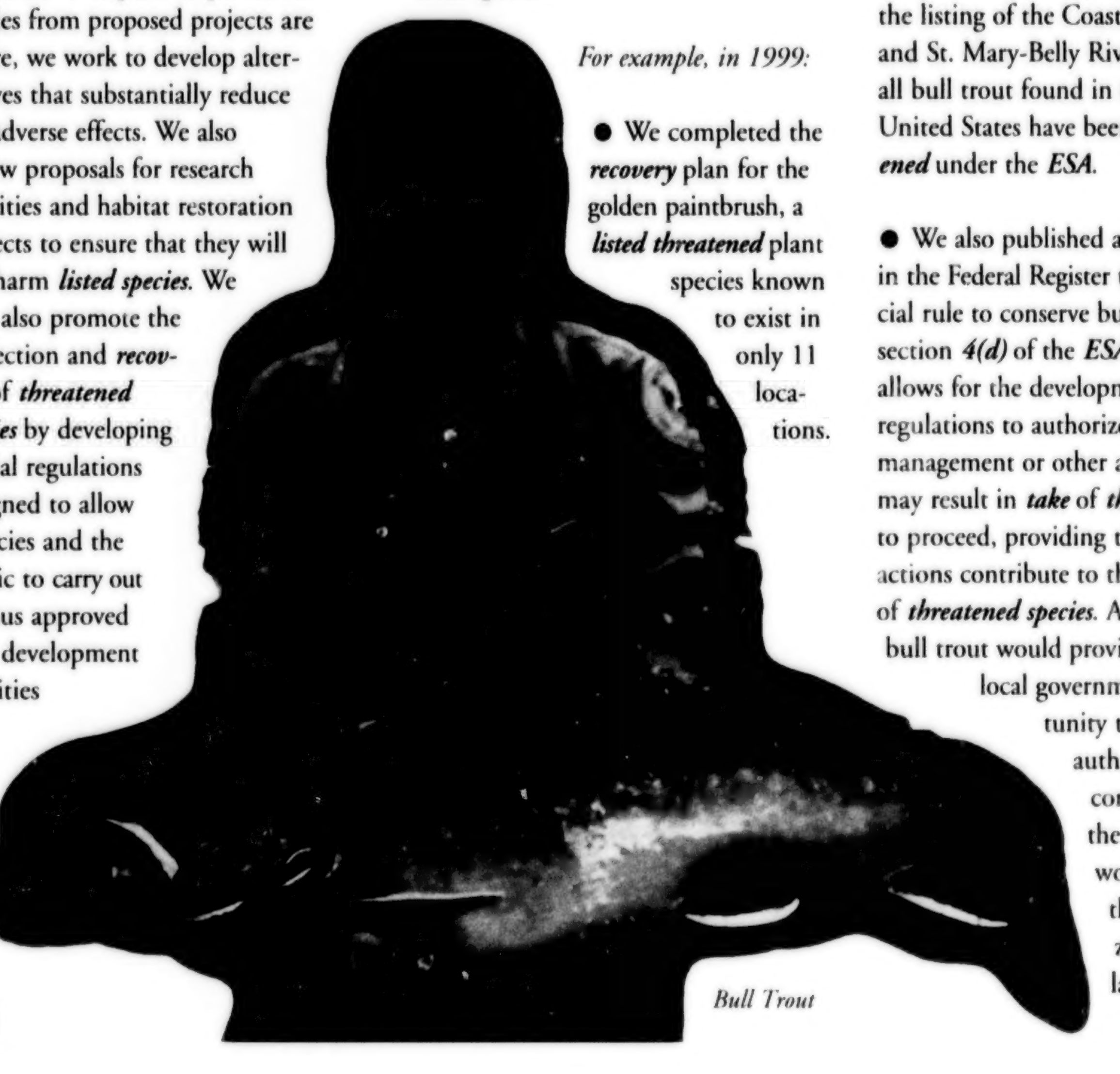
US Fish and Wildlife Service Western Washington Office Organization Chart


Division of Fisheries and Watershed Assessment
Division of Watershed Protection and Restoration
Division of Endangered Species
Division of Environmental Contaminants
Division of Conservation Planning
Division of Federal Activities
Division of Northwest Forest Plan Implementation
Office of Information, Education & Outreach
Management

Division of Endangered Species

The Western Washington Office ***(WWO)*** of the Fish and Wildlife Service ***(FWS)***, Division of ***Endangered Species***, is responsible for implementing the ***Endangered Species Act (ESA)*** in western Washington. We compile and analyze the information and documents required to add or remove species or their ***critical habitat*** to or from the national list of ***threatened*** or ***endangered species***. If species are listed, we provide for their protection by reviewing federal actions and consulting with federal agencies to mutually develop conservation measures to reduce impacts to ***listed species***. If impacts to protected species from proposed projects are severe, we work to develop alternatives that substantially reduce the adverse effects. We also review proposals for research activities and habitat restoration projects to ensure that they will not harm ***listed species***. We may also promote the protection and ***recovery*** of ***threatened species*** by developing special regulations designed to allow agencies and the public to carry out various approved land development activities while providing safeguards for protecting and enhancing habitat for ***threatened species***.

We establish ***recovery*** teams to develop ***recovery*** planning documents which identify tasks and objectives that, when implemented, provide directions and goals for species ***recovery***. To assure that we achieve our ***recovery*** goals, we work in partnership with the Washington Department of Fish and Wildlife and the Department of Natural Resources in administering a program that provides them funding to carry out activities that contribute to the ***recovery*** of ***listed species***.



Bull Trout

For example, in 1999:

- We completed the ***recovery*** plan for the golden paintbrush, a ***listed threatened*** plant species known to exist in only 11 locations.

- We assessed six species (four plants, one invertebrate and one mammal) for potential addition to the ***threatened*** or ***endangered species*** list. All of these species were approved as warranted as new ***candidate species*** in Washington.

- We prepared the draft and final versions of the Federal Register notices listing the Coastal-Puget Sound bull trout population as a ***threatened species***. This population, ***threatened*** by habitat degradation, dams and diversions, and interactions with non-native fish, contains the only known ***anadromous*** form of bull trout and is the only area where bull trout are found to coexist with Dolly Varden, its close relative, in the United States. ***Recovery*** planning for this population will become part of the ***recovery*** planning process already underway for the Columbia, Jarbidge, and Klamath bull trout populations. With the listing of the Coastal-Puget Sound and St. Mary-Belly River populations, all bull trout found in the coterminous United States have been listed as ***threatened*** under the ***ESA***.

- We also published a ***notice of intent*** in the Federal Register to prepare a special rule to conserve bull trout under section ***4(d)*** of the ***ESA***. Section ***4(d)*** allows for the development of special regulations to authorize various land management or other activities that may result in ***take*** of ***threatened species*** to proceed, providing the overall actions contribute to the conservation of ***threatened species***. A ***4(d) rule*** for bull trout would provide state and local governments an opportunity to use their own authorities to gain compliance under the ***ESA***. This would benefit thousands of citizens and small landowners who otherwise might be restricted from carrying out many traditional activities. This process presents a rare opportunity to gain voluntary conservation for the bull trout throughout the species range, including urban areas, while minimizing impacts to the public. The bull trout would be the only species covered by this special rule. A proposed rule will be developed and provided for public review in early 2000.

- We completed the final rule to list the Wenatchee Mountains checker-mallow as ***endangered***, without identifying ***critical habitat***. This plant is known from only five locations in the Wenatchee Mountains of central Washington.

Golden Paintbrush

- We also completed the proposal to list the Oregon spotted frog as ***endangered***, without identifying ***critical habitat***, under the ***ESA***. This species has been lost from up to 90 percent of its former range and is currently known to exist at only 32 sites in Washington, Oregon and British Columbia.

- We reviewed a petition to remove the northern spotted owl from the ***Endangered Species*** list in which the petitioner asserted that there had been errors in the original data used in the listing of the species; that spotted owls have increased in number, and that they are capable of living in second-growth timber. He also argued that the "Economic Impact Report submitted… was grossly underestimated." After reviewing recently-released demographic analyses which indicate that the species is continuing to decline range-wide, and considering that economic analysis is not a factor affecting the listing of a species, we found the petition presented no new information indicating that the original listing data was in error and that the petitioner had not presented substantial information to indicate that delisting may be warranted.

Section 7 of the ***ESA*** discusses how federal agencies will conduct business in such a way as to conserve ***listed species***. The ***ESA*** requires federal agencies to consult with the Fish and Wildlife Service on all projects which they fund, authorize, and carry out and which may impact ***listed*** or ***proposed species***. ***Section 7 consultations*** can take the form of information provided to landowners or managers regarding the likely occurrence of ***listed species*** on or near their property, reports on how a landowner's proposed project(s) may affect ***listed species*** and information on how the landowner can minimize their project's impacts.

- In the past year, we completed over 400 ***section 7 consultations*** for activities with federal agency involvement, and provided information on ***listed species*** occurance for 1,100 actions conducted by federal and non-federal entities. This is nearly a threefold increase over the number of consultations written the previous year. This increase is likely due to the listing of the bull trout as a ***threatened species*** in western Washington.

- During 1999 we conducted several formal and informal consultations with the ***Bureau of Indian Affairs (BIA)*** regarding timber harvest proposals on the Quinault Indian Reservation. Some of these consultations were on Quinault Indian Nation lands and others were on fee (Trust) lands, that is, lands owned by individual allotment holders. Each of these consultations involved harvest of trees, and affected one or more ***proposed*** or ***listed species*** including bull trout, bald eagles, spotted owls, or marbled murrelets. With the listing of the bull trout, and the proposed listing of the coastal cutthroat trout, the ***BIA*** is considering writing a ***programmatic consultation*** covering all timber harvest-related projects on fee lands. This would greatly reduce the need for individual consultations and significantly expedite the speed of future consultations.

- We are also working cooperatively with timber management staff from the Quinault Indian Nation, Bureau of Indian Affairs and the Department of the Interior to resolve long-standing concerns regarding the Quinault's desire to harvest ***old-growth*** timber on a 12,000-acre portion of the Quinault Reservation known as the North Boundary Area and the ability of the area to support reproductive marbled murrelets following the proposed harvest. Currently we are working to develop long-term conservation easements on two conservation blocks totaling 4,000-acres within the North Boundary Area that would contribute to the conservation of the marbled murrelet and compensate the Quinault Indian Nation for restrictions on their timber harvest.

- Mortality of marbled murrelets in salmon gillnet fisheries has been one cause of their decline, along with habitat loss and mortality from oil spills.

Thanks largely to ***section 7 consultations***, beginning when the species was ***listed***, we have been successful in implementing extensive measures for reducing the by-catch of marbled murrelets and other seabirds in non-tribal fisheries. In 1999, we completed a ***section 7 consultation*** for tribal salmon fisheries in Puget Sound covering the next five years. As part of the consultation, tribes will develop a ***conservation plan*** to address the reduction of the potential for by-catch of marbled murrelets. Implementation of these conservation measures will assist in ***recovery*** of the marbled murrelet.

- We also completed a formal consultation for the ***endangered*** plant, Bradshaw's lomatium, in Clark County, Washington. We worked closely with the Bonneville Power Administration ***(BPA)*** and a private corporation developing a golf course to reduce the negative impacts to the species by arranging for them to share a ***BPA*** access road that would also serve as a golf cart path for the development. This arrangement will allow ***BPA*** emergency and routine maintenance access to the site, allow for the golf course path needed for the development, and limit impacts to the ***listed species***. We also made provisions for Berry Botanic Garden to salvage any plants that may otherwise be destroyed during construction of the access route.

- In 1999, we completed the formal ***section 7 consultation*** with the Makah Indian Nation, under the authority of the ***BIA***, on a 10-year plan for timber harvest and related activities on trust and privately-owned lands on the 30,000-acre Makah Indian Reservation for 1999-2008. ***Listed species*** affected by the plan include the bald eagle, marbled murrelet, and northern spotted owl, as well as the recently-delisted peregrine falcon. By batching 10 years worth of work into one consultation, the Makah Indian Nation will substantially reduce their need to conduct individual consultations. This will reduce workload for the Makah Indian Nation, the ***BIA***, and the ***FWS***. It will also allow more timely implementation of projects on the ground, and the implementation of more meaningful conservation measures for ***listed***, ***candidate*** and sensitive species.

Programmatic consultations are one method of addressing a rapidly increasing ***section 7 consultation*** workload.

During 1999:

- We completed a programmatic ***section 7 consultation*** with the Federal Highways Administration for preservation and improvement projects for highways in the Washington Department of Transportation's Olympic Region. This ***programmatic consultation*** will cover approximately 100 projects over the next two years in a six-county area and will likely serve as a template for other Washington Department of Transportation regions. Benefits of the consultation include a streamlined process to comply with the ***ESA*** and a standardization of measures needed to minimize effects to ***listed species***. It will also create an incentive to implement conservation measures so that projects can be covered by the ***programmatic consultation***, which will speed their progress.

Timber harvest area with saved-tree area in center

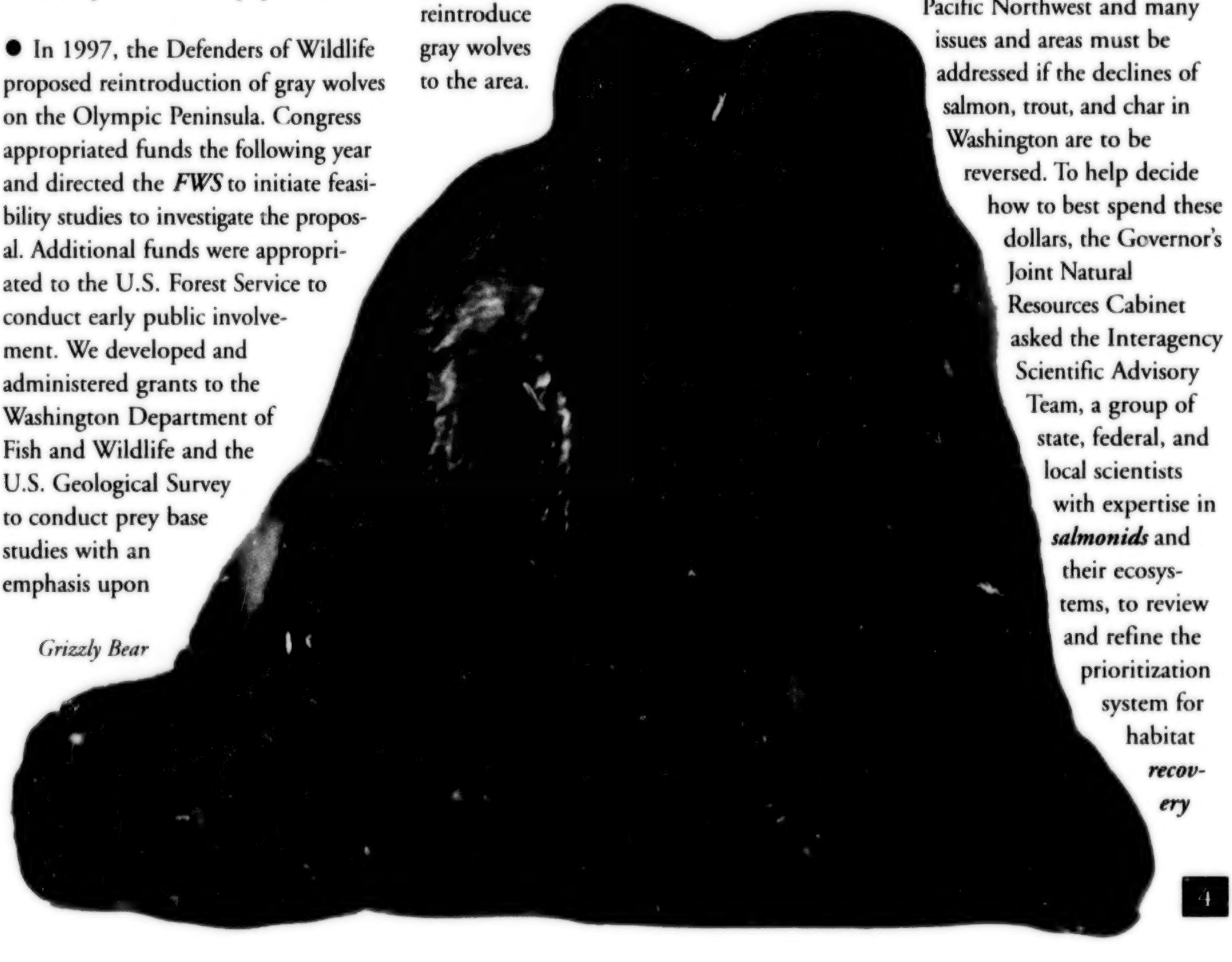
- We are currently working with other ***WWO*** Divisions to initiate two ***programmatic consultations*** with U.S. Army Corps of Engineers on ***Nationwide 404 permits***, and on Commencement Bay Superfund cleanup sites. We are also currently completing a Biological Opinion for a ***programmatic consultation*** with Olympic National Park for their 10-year Fire Management Plan.

- As members of a North Cascades Ecosystem Grizzly Bear Subcommittee, we have been instrumental in developing one- and five-year action plans to guide future grizzly bear ***recovery*** efforts within the North Cascades recovery zone.

Although the North Cascades Chapter of the Grizzly Bear ***Recovery*** Plan identifies initiation and completion of the ***National Environmental Policy Act (NEPA)*** process for ***recovery*** within the ecosystem as a top priority, lack of funding has limited progress for several years.

- Research was initiated in spring 1999 to conduct a grizzly bear hair-snagging survey throughout the ecosystem. Hair snagging involves the placement of hair collection sites — posts or trees wound with wire and scented with a natural attractant which encourages animals to rub against the wire — and the monitoring and collection of snagged hair from the sites. The collected hair is then analyzed for species identification. DNA analysis on the collected hair from the North Cascades effort may give insight into the composition of the existing remnant grizzly bear population in the ecosystem. Similar research is underway in the British Columbia portion of the ecosystem, increasing the data available for analysis. British Columbia has identified the North Cascades grizzly bear population as a top priority for ***recovery***, and is nearing completion of a ***recovery*** plan for their portion of the population.

- In 1997, the Defenders of Wildlife proposed reintroduction of gray wolves on the Olympic Peninsula. Congress appropriated funds the following year and directed the ***FWS*** to initiate feasibility studies to investigate the proposal. Additional funds were appropriated to the U.S. Forest Service to conduct early public involvement. We developed and administered grants to the Washington Department of Fish and Wildlife and the U.S. Geological Survey to conduct prey base studies with an emphasis upon identifying appropriate and cost-effective techniques for estimating black-tailed deer and Roosevelt elk population levels on the Peninsula. We also awarded a grant to the University of Idaho to conduct a reintroduction feasibility study, which was released in the spring of 1999. This report indicates that reintroduction of gray wolves to the Olympic Peninsula is biologically feasible, but it also identifies political, social, cultural, and budgetary issues that need to be addressed before further action is possible. The study suggested that the Olympic National Park could support a core population of approximately 56 wolves and indicated the entire Olympic Peninsula would support about 125-260 wolves. The study also indicated that further wolf prey base studies and wolf/road relationships studies and the development of a strong public education and involvement program would be essential to any efforts to reintroduce gray wolves to the area.



Grizzly Bear

- During 1999, we also participated with other federal agencies, state agencies, tribes, industry representatives and local governments in the Forest and Fish collaborative process to develop new Washington State Forest Practice rules that will improve ***riparian*** habitat on non-federal lands in Washington. These new rules will help gain compliance with the ***ESA*** and the ***Clean Water Act*** while providing the habitat to support a harvestable supply of fish and an economically viable timber industry. The report provides recommendations for protecting ***riparian*** habitat, stream channel migration zones and ***riparian*** buffers, and addresses solutions to problems involving unstable slopes, ***adaptive management***, road planning, construction and removal.

- Millions of dollars from federal, state and other sources are being directed toward restoration of ***salmonids*** in Pacific Northwest and many issues and areas must be addressed if the declines of salmon, trout, and char in Washington are to be reversed. To help decide how to best spend these dollars, the Governor's Joint Natural Resources Cabinet asked the Interagency Scientific Advisory Team, a group of state, federal, and local scientists with expertise in ***salmonids*** and their ecosystems, to review and refine the prioritization system for habitat ***recovery*** activities outlined in the January 1999, Draft Statewide Strategy to Recover Salmon. Our bull trout fisheries biologists participated in the development of the team's report entitled "A system for prioritizing water resource inventory areas in western Washington for protection and restoration of wild ***salmonids***."

- We contributed significantly to the resolution of an investigation into an incident involving harvest of suitable habitat for northern spotted owls in Skagit County, Washington. The harvest of suitable spotted owl habitat adjacent to the Lower White Creek owl nest site within the Hamilton Tree Farm by Golden Phoenix Trading Company initiated an investigation by ***FWS*** Law Enforcement and referral to the U.S. Attorney's Office in Seattle, Washington.

Crown Pacific Partners, L.P., sold the property to Golden Phoenix, who harvested the timber in September 1996. Crown Pacific sold the property while they were negotiating a ***Habitat Conservation Plan (HCP)*** with the ***FWS*** for their Hamilton Tree Farm which would have included the White Creek property. Crown Pacific failed to notify the concerned agencies of the sale, which conveyed a state Forest Practices Permit to harvest the White Creek site. The ***FWS*** learned of the sale two weeks after the transaction and after Golden Phoenix had felled all of the timber under the state permit. Loss of this component of the property under discussion significantly altered the course of the ***HCP*** negotiations.

Crown Pacific, wanting to complete the ***HCP*** for the tree farm and repair relationships with the agencies, offered as settlement for their oversight, the transfer of 400 acres of second-growth timber known as the Thunder Creek property to the U.S. Government. The property is located adjacent to the Crown ***HCP*** and a U.S. Forest Service ***Late-Successional Reserve (LSR).*** Spotted owls and marbled murrelets are located adjacent to this property and the future habitat is expected to contribute to the conservation of these species. Ownership of the property has been transferred to the U.S. Forest Service, who will manage the area as an ***LSR.***

Challenges: FY 2000 and Beyond

The trend toward increasing numbers of requests for ***section 7 consultation*** we handle yearly is expected to continue, especially considering the recent proposal to list the coastal cutthroat trout. As the ***FWS*** takes over jurisdiction of this species from the National Marine Fisheries Service ***(NMFS)***, we expect to review the information the ***NMFS*** used to list the ***anadromous*** portion of the species, expanding on it to consider populations not reviewed in the original listing process. These will include populations existing above fish passage barriers and other non-***anadromous*** population segments. If a listing proposal goes forward, we expect that we will participate in its preparation, and begin ***recovery*** planning efforts if the species is ***listed.*** We anticipate many other activities during FY 2000 as well:

- We will review the ***ESA*** status of several species, prompted by the recent approval of six new ***candidate species.***

- We expect to propose for listing one invertebrate, the mardon skipper.

- We will develop a proposed rule to list Dolly Varden trout because of their similarity of appearance to bull trout.

- We will publish proposed rules for two ***candidate*** plant species (northern wormwood and Umtanum desert-buckwheat) in the Federal Register.

- We will test genetic material from the various golden paintbrush locations to help with determining seed sources for reintroduction projects. Protected sites within the species historic range will be matched to the most appropriate seed source and assessed for potential reintroduction efforts.

- We will prepare a mechanism under section 4(d) of the ESA for bull trout throughout their range that will cover restoration and many land and water management activities. This mechanism will facilitate adoption of regulations that meet the "conservation" standards of the Act under a ***4(d) rule*** that will provide ***ESA*** compliance assurance to participating jurisdictions. We anticipate working hand in hand with city, county and state agencies in western Washington to develop a rule that will provide ***ESA*** compliance.

- We will continue ***recovery*** efforts already underway for the bull trout, establishing ***recovery*** zones for the Coastal-Puget Sound ***Distinct Population Segment.*** This will involve participation from local fisheries experts, agencies and the public.

- We will work closely with agricultural interests to develop conservation strategies to provide protection for bull trout and coastal cutthroat trout, encouraging them to develop strategies that could be covered under a ***4(d) rule*** or ***Habitat Conservation Plan.***

- We will be fully involved with the ***Watershed Resource Inventory Area (WRIA)*** assessments being conducted by state and county participants. Completion of these inventories will be the first step in establishing comprehensive watershed plans for ***salmonids*** in Washington.

- We will continue ***recovery*** efforts for the gray wolf and grizzly bear, with major emphasis on public education and outreach.

Tree stand thinned and pruned to promote northern spotted owl dispersal habitat

- We will continue to provide support and resources for other HCPs being developed in the ***WWO***, and continue to participate in negotiation efforts and provide biological expertise on ***listed*** and non-***listed species*** alike during plan development.

- We will continue our work with participating tribes to further reduce marine bird and marbled murrelet by-catch resulting from tribal salmon net fisheries.

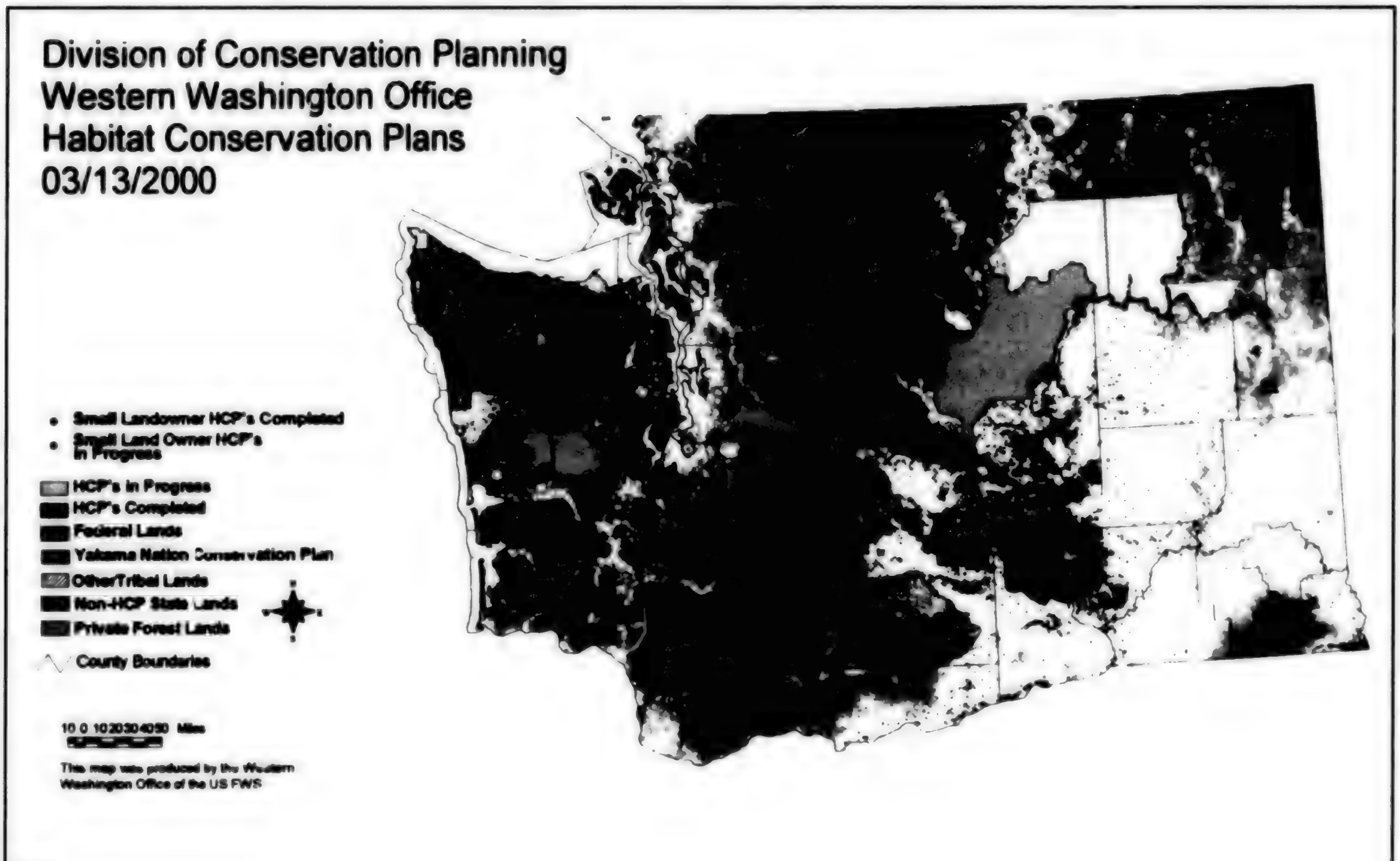
The Western Washington Office Division of ***Endangered Species*** is a seasoned team of fish and wildlife professionals well prepared to take on the prodigious challenges facing us as we strive to protect, preserve and recover the ***listed species*** of Washington. We face many challenges: rapid population growth and the development and urbanization that accompanies it, converting fish and wildlife habitat to human use; the need to balance the requirements of fish and wildlife and their habitats against the social and economic demands of a vibrant and complex human society; and the demands of the public that we both protect our fragile environment and provide greater access to it. We are confident that, given the appropriate resources and the support of the American people, we can do the job.

Division of Conservation Planning

The Division of Conservation Planning, formerly the Habitat Conservation Planning Program, is responsible for providing support to non-federal entities (private companies and individuals, and state and local governments) in the preparation of ***conservation plans***. Until recently, the conservation tool used was the ***Habitat Conservation Plan***, or ***HCP***. Additional tools which we plan to emphasize in the future include ***Safe Harbor Agreements***, ***Candidate Conservation Agreements with Assurances***, and special rules under section ***4(d)*** of the ***Endangered Species Act***. Non-federal land managers may choose to develop and implement a ***conservation plan*** using one of these tools in order to ease prohibitions against the ***incidental take*** of species listed as ***threatened*** or ***endangered*** under the ***ESA***. We assist the interested land manager or owner in the preparation of a plan which, if it meets specific criteria, we may recommend to the Secretary of the Interior for acceptance. Essentially, the applicant trades conservation practices for ***incidental take*** allowances.

These ***conservation plans*** are designed to provide immediate and long-term conservation benefits to ***ESA-listed species***, species proposed for listing, and candidates for listing. Some ***conservation plans*** have the added bonus of providing long-term benefits to species whose populations could benefit from conservation efforts, but which are not currently ***ESA-listed, proposed, or candidates***. Examples in Washington include bull trout, coastal cutthroat trout, northern spotted owls, salmon, steelhead trout, marbled murrelets, grizzly bears, and the Oregon spotted frog. Examples of ***unlisted species*** whose populations could benefit from conservation efforts and for which applicants have chosen to provide protection include several species of salamanders, bats, and woodpeckers.

Conservation of these species is achieved through ***conservation plan*** provisions which include protection of special habitat types such as caves and wetlands, and the protection of streamside or ***riparian*** habitat to ensure streams are within their natural temperature range and ***sediment*** conditions, and naturally connected to other streams, and contain elements important to spawning and rearing fish such as large downed trees in the channel. Other efforts include ensuring proper stream flows for spawning and rearing fish;


Division of Conservation Planning
Western Washington Office
Habitat Conservation Plans
03/13/2000
● Small Landowner HCP's Completed
● Small Land Owner HCP's in Progress
▨ HCP's in Progress
■ HCP's Completed
■ Federal Lands
■ Yakama Nation Conservation Plan
▨ Other/Tribal Lands
■ Non-HCP State Lands
■ Private Forest Lands
County Boundaries
10 0 1020304050 Miles
This map was produced by the Western Washington Office of the US FWS

ensuring that all forest age classes, including older forest habitats, and elements of forest structural complexity (such as snags, woody debris and large, live trees) are well distributed in adequate quantities across the landscape; managing roads to reduce fine ***sediment*** input to streams and eliminate fish passage blockages; and applying timing restrictions on management activities likely to disturb species being addressed.

Two additional elements are essential to the success of any ***conservation plan***. A long-term monitoring program is necessary to ensure that the plan is fulfilling its intended conservation objectives, and an ***adaptive management*** program is needed to allow for adjustments to the plan if new information or monitoring indicates changes are needed.

Conservation planning efforts in Washington have focused primarily on commercial timberland management for small to statewide operations. However, recent conservation efforts have addressed municipal water supply management for major metropolitan areas, urban and suburban area management on a city to multi-county scale, and agricultural land management for small to statewide operations.

To date, five HCPs have been completed in Washington, covering in excess of two million acres of commercial forest land (see map). These include:

- Port Blakely Tree Farm ***HCP*** in Pacific, Grays Harbor, and Lewis counties;
- West Fork Timberlands (formerly Murray Pacific) ***HCP*** in Lewis County;
- Plum Creek Timber Company ***HCP*** in King and Kittitas counties;
- Scofield Corporation ***HCP*** in Chelan County;
- Washington Department of Natural Resources ***HCP*** located on state-owned forest lands within the range of the northern spotted owl.

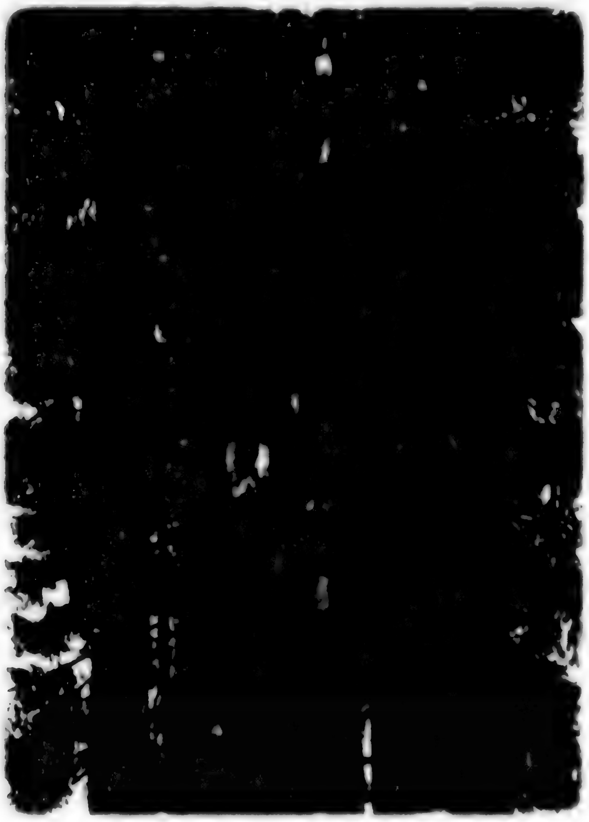
These forest land HCPs often complement ***Late-Successional Reserves*** on adjacent National Forest lands. For example, the Murray Pacific ***HCP*** provides an average of 100-foot no-harvest buffers on both sides of ***fish-bearing*** streams between the Gifford Pinchot National Forest and a valuable piece of habitat known as the Mineral Block. Plum Creek's ***HCP*** ownership, which is interspersed with National Forest lands, creates ***riparian*** buffers out to 200 feet to provide protection similar to those established on adjacent National Forest lands under the Aquatic Conservation Strategy of the ***Northwest Forest Plan***.

Five ***conservation plans*** are currently in the latter stages of development:

- Crown Pacific ***HCP*** in Whatcom County and Skagit lands;
- Champion Pacific Timberlands ***HCP*** in Klickitat County;
- Simpson Timber Company ***HCP*** in Thurston, Mason, and Grays Harbor counties;
- Tacoma Public Utilities ***HCP*** in the Green River watershed of south King County;
- Seattle Public Utilities ***HCP*** in the Cedar River watershed, also in King County.

Together, these developing HCPs represent nearly 500,000 acres with stream and forest conservation measures aimed at providing long-term survival for fish and wildlife. The duration of ***conservation plans*** completed and under development runs from 30 to 100 years and will ensure an increase in fish and wildlife habitat quality and quantity for years to come.

HCP harvest unit with 100-foot buffer on small stream and green tree retention on uplands



A snag left for wildlife provides important habitat for many species.

Conservation planning in Fiscal Year 1999 can be categorized into five stages of project development. These stages are: Projects Initiated, Projects Continued, Applications Received, Project Implementation and Monitoring, and Future Projects. Plans in the Projects Initiated stage are the newest efforts, begun in 1999. In this stage, we work with potential applicants to determine the general direction of the project and begin working on the environmental review document. Projects Continued are those that were initiated prior to 1999, but for which formal applications have not been received and the supporting documents are not ready for public review. Projects move into the Applications Received stage when a formal ***Incidental Take Permit*** Application and draft ***conservation plan*** are received from an applicant and a draft environmental document has been prepared. These projects are ready for public review. During the Project Implementation and Monitoring stage, the activities defined in the ***conservation plan*** and signed into a contract via the ***Implementation Agreement*** are put into place. This stage continues throughout the life of the ***conservation plan*** when monitoring for compliance and plan implementation effects are translated into the ***adaptive management*** process. During the Future Projects stage, we actively participate with other groups or individuals to determine possible ways to comply with the ***ESA*** while providing conservation benefits to fish and wildlife. This stage often involves initiating contact and brainstorming innovative approaches to modifying landscape management uses to provide conservation benefits to species in a variety of landscape conditions.

Projects Initiated in 1999

- The City of Bellingham, ***NMFS*** and the ***FWS*** have met several times to discuss the possibility of an ***HCP*** related to water withdrawal purposes and other water quantity/quality issues relative to the Nooksack River. The Nooksack Tribe, the City of Lynden, and Whatcom Public Utilities Department may also be interested in joining this effort. In preparation, we are familiarizing ourselves with the diverse social and aquatic issues relative to the Nooksack basin.

- Last fall, we initiated the Lewis County Family Forest Stewardship Project, a project to prepare a countywide ***conservation plan***. This ***conservation plan*** is being produced in collaboration with local landowner groups, state and federal agencies, American Indian Tribes, environmental groups, and organizations which provide technical assistance to small forest landowners.

  Because of the proximity to Interstate 5 and nearby employment opportunities in Olympia, private lands in Lewis County are increasingly being developed. This is a challenge to the ***FWS*** and landowners who recognize the importance of maintaining habitat for fish and wildlife species. The goals of this planning effort are to protect fish and wildlife resources, providing landowners with ***regulatory assurances*** while maintaining the economic viability of small forest landowners. We are considering a combination of conservation tools to meet these goals including HCPs, ***Safe Harbor Agreements***, and ***Candidate Conservation Agreements***. We anticipate working with numerous individual landowners affecting many thousands of acres.

- We have reviewed two drafts of Storedahl and Sons, Inc. Daybreak Mine ***HCP***. The ***HCP*** area consists of 300 acres adjacent to the East Fork Lewis River. Currently the owner processes gravel at the site using five existing ponds as settling ponds. Under the ***HCP***, the owner proposes to continue processing gravel on-site, as well as extracting gravel from additional locations on the property. To offset impacts of these proposed ***covered activities***, the applicant will implement several measures to substantially improve the water quality in the existing ponds, new ponds to be developed, and at the discharge point; enhance habitat on Dean Creek (a tributary to the East Fork Lewis); implement an ***avulsion*** contingency plan; and restore ***floodplain*** forest as part of a reclamation process. The ***HCP*** will address salmon, bull trout, and the Oregon spotted frog.

Forest HCP's frequently involve working with landowners to develop prescriptions that accelerate the development of forest structure

- We began meeting with the Washington Department of Fish and Wildlife in 1999 to develop an ***HCP*** for their Hydraulic Project Approval ***(HPA)*** process. Six public ***scoping*** meetings were held throughout the state to gather public input. The ***HPA*** process is a state program which regulates all activities which affect the bed or flow of state waters.

State biologists, in consultation with ***NMFS*** and ***FWS*** biologists, have begun refining the specific ***Washington Administrative Code*** which governs the ***HPA*** program. Over the next six months, we anticipate reviewing the proposed ***Washington Administrative Code*** to ensure that it provides adequate conservation of fish and shellfish.

As an interim measure to address how ***HPA*** permits will be issued prior to the approval of their ***HCP***, we developed a ***Memorandum of Agreement (MOA)*** with the Washington Department of Fish and Wildlife, ***NMFS***, and ***FWS***. The ***MOA*** also sets guidelines for the development of the ***HCP***.

- We have been a key player in a multi-stakeholder planning effort in the ***Timber, Fish and Wildlife (TFW) forum***. ***TFW*** is a consortium of representatives from the timber industry and small tree farmers, state agencies, tribes, municipal governments and federal agencies. This group has been working together to develop a set of statewide forest practices rules, called the ***Forest and Fish Agreement***, that address salmon, bull trout and clean water under the requirements of the ***ESA*** and the ***Clean Water Act***. In April 1999, the group proposed changes in the ***State Forest Practices Act*** to the Washington Legislature. The Legislature responded by passing Senate Bill 2091 in June, which directs amendment of the ***State Forest Practices Act*** to comply with the substance of the ***Forest and Fish Agreement***.

We were involved in developing and negotiating several key components of this agreement including protection for fish and non-***fish-bearing*** streams, road management plans, and ***adaptive management*** research provisions which address the functional habitat needs of resident fish, amphibians, and salmon. Staff participated in technical workgroups tasked with gathering the best available scientific information, negotiating prescriptions, reviewing and proposing revisions to existing regulations, assisting with budgeting exercises, and testifying to legislative committees. Our main focus is protecting bull trout and extending legal assurances to the regulated landowners through an ***ESA 4(d) rule***. Work is ongoing on many aspects of this agreement.

Many species of waterfowl benefit from riparian protection afforded in HCPs.

Forested wetland (left) and talus slopes (right) following timber harvest conducted under a forest HCP. Both these special habitat types are not required to have leave trees associated with them and may be harvested more intensively under State Forest Practices Rules and Regulations. (photo credit: Plum Creek Timber Company)

An Emergency State Forest Practices rule was drafted in November, with our assistance, which will be considered for implementation as an interim measure pending completion of the ***conservation plan.***

- We completed a review of the Tacoma Public Utilities draft ***HCP*** which addresses 15,000 acres in the Green River Watershed in south King County. Final draft documents were relased for public comment on January 14, 2000. The plan will address approximately 30 species and feature commitments by Tacoma to forego or greatly reduce logging on approximately 70 percent of the ownership for the next 50 years. The plan will also provide more dependable and better timed flows in the lower Green River to improve spawning conditions for ***salmonids*** and provide access for ***anadromous*** fish to and from the upper Green River above Howard Hanson Dam. This will restore ***anadromous*** fish access to approximately 45 percent of the Green River watershed closed to migrating fish since 1913.

- We continue to coordinate the development of a long-term plan for the Yakama Indian Nation's forest management operations, which are facing a forest-health crisis caused by a ***spruce budworm*** infestation. We are engaged in the development of ***conservation plans*** on ***inholdings*** within the forest reserve of the Yakama Nation. In the interim, we are continuing annual ***ESA section 7 consultations*** and participating in field reviews and overflights.

- We are also developing a combined draft ***HCP*** and Environmental Assessment for Champion Pacific Timberlands' approximately 230,000 acre ***inholding*** within Yakama Indian Nation lands in south-central Washington. Draft documents are anticipated to be available for public review in late winter or early spring 2000.

- We have nearly completed work to develop a ***Safe Harbor Agreement*** for the Tagshinney Tree Farm, a non-industrial forest landowner, located in Lewis County, Washington. Negotiations have been ongoing with the landowner and we hope to finish this agreement in early 2000.

- Crown Pacific, L.P., submitted a formal ***Incidental Take Permit*** Application to us in the fall of 1999. The associated ***HCP*** covers 85,000 acres of forest land and is designed to provide habitat for 27 ***terrestrial*** and aquatic species including the northern spotted owl, marbled murrelet, grizzly bear, Puget Sound chinook and the Coastal/Puget Sound ***distinct population segment*** of bull trout. All these species are listed under the ***ESA***.

- The City of Seattle has formally submitted their ***Incidental Take Permit*** Application for an associated ***HCP*** which will include multi-party and multi-species agreements to cover water operations and related watershed management and fisheries ***mitigation*** on 90,000 acres in the Cedar River watershed in the western Cascades. This municipal watershed provides approximately two-thirds of the water needs for the Seattle area.

Key provisions of this ***HCP*** include no future logging on city-owned lands in the watershed; restoring fish access to 14 miles of river and tributaries above a ***diversion dam*** that has blocked ***anadromous*** fish since 1901; establishing river flows necessary for fish spawning and rearing in the lower 22 miles of the Cedar River; meeting state requirements for sockeye salmon ***mitigation*** by expanding a pilot hatchery that supports a popular sport, commercial, and tribal fishery in Lake Washington; repairing and decommissioning 240 miles of existing logging roads; and providing $5 million for downstream restoration projects on lands not owned by the city. This plan will benefit several species listed under the ***ESA***, including Puget Sound chinook and the Coastal/Puget Sound ***Distinct Population Segment*** of bull trout.

- We developed a draft *HCP* with Simpson Timber Company for 261,000 acres of forest land in Thurston, Mason and Grays Harbor counties. Simpson submitted their formal application to the *FWS* in the fall of 1999. This *HCP* focuses on the protection of ***riparian*** and aquatic habitat, with the goal of contributing to the conservation of all native fish on Simpson's *HCP* ownership, especially salmon, bull trout, and coastal cutthroat trout. It will provide habitat for 51 ***terrestrial*** and aquatic species, including five species currently listed under the *ESA*: chum and chinook salmon, bull trout, marbled murrelet, and bald eagle.

The Simpson *HCP* is a first-time initiative combining ***Clean Water Act*** and state water quality standards with a federal *ESA* process to address ***non-point source*** water pollution issues on Washington timberlands. This effort involved three state agencies, the State Departments of Ecology, Fish and Wildlife, and Natural Resources; three federal agencies, the *FWS*, *NMFS*, and Environmental Protection Agency; and involves close coordination with local tribes and the environmental community.

- We worked with the Plum Creek Timber Company to develop an agenda and reporting format for the second-year report on their *HCP*-related activities. This report is part of the agreement establishing their *HCP*. We also attended a pre-harvest review with the U.S. Forest Service, Washington Department of Natural Resources, Yakama Indian Nation, and the Washington Department of Fish and Wildlife. Plum Creek's *HCP* has been modified to incorporate their land exchange with the U.S. Forest Service along Interstate 90. For this, we prepared a Draft ***Supplemental Environmental Impact Statement (SEIS)***, a Final *SEIS*, and a joint ***FWS-NMFS Record of Decision***. The ***SEISs*** underwent public review and comment periods, and Division staff met with the Muckleshoot Indian Tribe in Auburn several times to discuss their specific concerns. A further modification to these documents is planned to add four species to Plum Creek's permit. Canada lynx and Puget Sound bull trout will be added under *FWS* jurisdiction and Mid-Columbia Steelhead and Puget Sound Chinook under that of the *NMFS*.

- We also continue to work with Port Blakey Tree Farms on the *HCP* for their Robert B. Eddy Tree Farm in Pacific, Grays Harbor and Lewis counties. This plan provides ***incidental take*** coverage for all species that may occur on 7,500 acres of forest lands. All existing roads have been improved, and monitoring is ongoing to ensure the goals of the *HCP* are being met. We recently attended an annual report meeting and site visit, a requirement of this *HCPs* monitoring and reporting provision.

- The Washington Department of Natural Resources *(DNR) HCP* provides ***incidental take*** coverage for all species that may occur on 1.8 million-acres of *DNR*-managed lands within the range of the northern spotted owl. This year, we participated in *DNR*'s first annual comprehensive report and provided feedback for future reporting, and completed the Biological Opinion to add bull trout west of the Cascade Crest to the ***Incidental Take Permit***. We continue to be involved in developing the ***Riparian*** Management Activities Guidelines for *DNR* foresters which will enable them to implement the conservation measures and intent of the *HCP*.

- The *HCP* for West Fork Timber Company, formerly the Murray Pacific *HCP*, provides ***incidental take*** coverage for all species that may occur on their 53,500 acres of forest lands. We recently participated in a field trip with West Fork representatives, and the *FWS* Regional Director and Assistant Regional Director for the North Pacific Coast Ecoregion, to view some of the implementation strategies of this *HCP*. We also developed two minor amendments to clarify specific provisions of the *HCP*, and attended the annual report meeting to review and discuss *HCP* implementation progress.

- We discussed ***conservation plans*** to address Canada lynx with the Washington Department of Fish and Wildlife and two forestry companies which hold state-sponsored Canada lynx ***conservation plans***, and to explore the potential for a ***programmatic HCP*** to combine the ***conservation plans*** of these three land managers and possibly include other entities.

Canada Lynx

Spotted owls provided much of the early impetus for individuals to develop HCPs.

To further the conservation benefits of our implemented projects, we regularly engage additional landowners to determine the best strategies to help them comply with the ***ESA***. The following projects are typical of our ongoing efforts to improve protection of fish and wildlife resources.

- Accompanied by ***FWS*** Regional Office staff, we met with the ***DNR*** to discuss possibilities for an ***HCP*** covering 1.5 million acres of state-managed lands east of the Cascade Crest which are outside their current ***HCP***. Coverage could include agricultural activities and extend to other landowners, particularly those leasing ***DNR***-managed lands.

- We attended three public meetings hosted by Thurston Conservation District regarding their ongoing conservation planning effort for Scatter Creek landowners.

Environmental review is an important element in the success of the Division of Conservation Planning. Each proposed conservation plan is subjected to a thorough environmental review under the guidelines of the ***National Environmental Policy Act*** of 1969, as amended ***(NEPA)***. ***NEPA*** has two primary objectives: to ensure that agencies have available and carefully consider detailed information concerning significant environmental impacts of a proposal, and to guarantee that relevant information will be available to the public, who will play a role in the agency decision-making process, and implementation of decisions. These are often referred to as "***NEPA***'s Twin Objectives."

With these goals in mind, during 1999:

- We improved our methods for determining impacts for analyses.

- We expanded our cumulative impacts analysis.

- We held numerous public meetings throughout the state to facilitate public participation.

- We extended public comment periods in direct response to public requests.

- We began posting all documents to the internet to expand and improve access.

- We initiated a pilot project with the Washington Department of Fish and Wildlife to allow on-line public comments on documents under public review.

- We began producing documents on low-cost computer CD-ROMs which are made available to the public.

- We reduced jargon in environmental documents to support the President's "Writing in Plain Language" initiative.

- We initiated a tracking system by contacting each Washington tribe requesting that they provide contact information and identify geographic areas in which they are interested.

The work of Division of Conservation Planning goes beyond preparing ***conservation plans*** and the associated ***NEPA*** documentation.

For instance, in 1999:

- We provided technical advice and assistance to the ***FWS*** Spokane Field Office and the Foster Creek Conservation District in their efforts to initiate an ***HCP*** process to cover more than 1,000 farmers and ranchers.

- We reviewed a grant application regarding a project made to the National Fish and Wildlife Foundation which was subsequently awarded to the Foster Creek Conservation District.

- We provided expertise, when requested, to the ***FWS*** Snake River Field Office regarding the ongoing Plum Creek Native Fish ***HCP***. This ***HCP*** began in the Western Washington Office's Division of Conservation Planning but has been moved to the Snake River Field Office in Boise, Idaho.

Challenges: FY 2000 and Beyond

We are on the cusp of a new beginning, moving into new venues of land use and planning. Historically, much of the emphasis for our program has been on developing ***habitat conservation plans*** for forested habitats. With recent fish listings, however, we are starting to see heightened interest in water-related planning efforts. Instead of large forest land owners, these new planning partners are often cities, counties, and individual small landowners. With these new partners, we are excited to begin using new tools in the ***ESA*** toolbox, such as ***Safe Harbor Agreements*** and ***Candidate Conservation Agreements***. We also recognize that planning efforts at the county and watershed scale are a better way to do business. Management plans aimed at providing aquatic habitat and fish protection will need to be considered as potential ***conservation plans***. We are exploring and developing the value of incorporating ***4(d)*** Special Rules into these planning efforts as a method of providing for species ***recovery***.

We recognize and embrace new efforts to develop ***conservation plans*** with members of the agricultural community. While this is a new arena, we are eager to participate, especially with the recent listings of salmon and bull trout. Large, multi-stakeholder, watershed-scale conservation efforts at the ***Watershed Resource Inventory Area (WRIA)*** level are beginning to draw more interest from affected agencies and the public. We also expect to face new issues related to water rights, water diversions, chemical use, and the impacts of a host of agriculture land management uses including dry-land wheat farming, orchards and cattle grazing.

The next several years hold many challenges for the Division of Conservation Planning, and we are preparing to meet them. ***NEPA***'s environmental review process will continue helping to ensure that our recommendations to ***FWS*** management will involve thorough environmental scrutiny and ample public participation. Some of our plans for the future include efforts to increase staff size to keep up with the demand for assistance in developing ***conservation plans*** and to help manage the ***NEPA*** process effectively and efficiently; increase standardization and streamlining where feasible; continue to improve outreach efforts by encouraging additional agency and tribal participation, initiate advisory boards and scientific review panels, and holding more public meetings; and continue to enhance analysis of social, economic, cultural, and cumulative impacts.

We recognize that there may be other planning efforts where we will need to adapt new techniques to meet divergent issues. In some of these cases, our existing planning tools may not be the best way to meet the ***FWS*** mission. In these situations, we will seek creative solutions and incorporate new techniques at every opportunity.

Division of Northwest Forest Plan Implementation

The ***Northwest Forest Plan (NWFP)*** is a comprehensive plan for managing federal forests within western Washington, western Oregon, and northern California to protect and enhance habitat for ***late-successional*** and ***old-growth*** forest related species, including the northern spotted owl; provide economic assistance to timber-related workers, businesses, and communities; and to coordinate the activities and responsibilities of federal agencies and state, local, and tribal governments. The ***NWFP*** is a direct outgrowth of the 1993 Presidentially-convened Forest Conference in Portland, Oregon, and was intended to break the impasses that had brought federal timber sales to a standstill after the northern spotted owl was listed as a ***threatened species*** under the ***ESA*** in 1990. The ecosystem management component of the *NWFP* includes region-wide federal land allocations and strategies for managing forested lands for timber production while conserving ***late-successional*** and ***old-growth*** forest related species and aquatic resources. The ***NWFP*** also includes an emphasis on monitoring and ***adaptive management***. The interagency and intergovernmental component emphasizes early participation and resolution of agency and governmental issues.

Riparian reserve restoration on the Gifford Pinchot National Forest

The ***WWO*** Division of ***Northwest Forest Plan*** Implementation works collaboratively with the Gifford Pinchot, Olympic, Mt. Baker-Snoqualmie, Wenatchee, and Okanogan National Forests in Washington to accomplish the goals and objectives of the ***NWFP***. Specifically, we assist in preparing ***landscape-level analyses*** such as ***watershed analyses***, ***Late-Successional Reserve Assessments***, and ***Adaptive Management Area plans*** that guide future land management decisions. We use these guides to design and prepare timber sales, ***watershed restoration*** projects, and recreational management plans. We actively participate in ***implementation monitoring*** and support/conduct research designed to enhance our knowledge of ***NWFP***-related issues. As a result of being involved early in the planning stages for forest management activities, the ***FWS*** has agreed to streamline the ***ESA*** consultation process, enhancing efficiency.

The ***NWFP*** established a network of conservation areas, known as ***Late-Successional Reserves (LSRs)***, for the spotted owl and other ***late-successional*** associated species. When the ***NWFP*** was signed, site-specific conditions within these ***LSRs*** were not known, and analyses to evaluate such conditions were specified in the ***NWFP***. The ***FWS*** conducted an ***analysis*** of the condition and function of the ***LSRs*** on the Gifford Pinchot National Forest in southwest Washington. The analysis included the use of the High Potential Nesting Habitat model, developed by the ***WWO***, to evaluate habitat across the landscape that is likely to support reproductive spotted owls. The analysis showed that the ***LSR*** network, at the forest-wide level, is providing the biological function of spotted owl ***critical habitat***. However, the results did highlight High Potential Nesting Habitat areas that may be of site-specific, short-term concern. We also tested and confirmed an assumption in the ***NWFP*** that sufficient ***spotted owl dispersal habitat*** exists between ***LSRs***, but the results identified some areas of dispersal concern. This analysis was used in the planning process for all Gifford Pinchot National Forest timber sales in 1999 to minimize effects on spotted owls. A similar ***landscape-level analysis*** is being developed to evaluate potential Canada lynx habitat, a species proposed for listing under the ***ESA***, on the Gifford Pinchot and Mt. Baker-Snoqualmie National Forests.

Programmatic consultations expedite the ***ESA section 7 consultation*** process while still providing benefits to ***listed*** and ***proposed species***. The ***FWS*** has established ***programmatic consultations*** on all ***NWFP*** National Forests in Washington, except the Okanogan National Forest. We work closely with the National Forests to provide technical guidance early in the project planning process to ensure compliance with the ***NWFP*** and the ***programmatic consultation*** prior to implementation. These multi-year ***programmatic consultations*** contain fish and wildlife conservation measures that must be followed for each proposed project to minimize impacts to ***listed*** and ***proposed*** fish and wildlife species. Activities covered in these consultations include road, trail, and campground construction, reconstruction and maintenance; ***watershed restoration*** activities; timber stand commercial and pre-commercial thinning; salvage sales; and special use permits (such as road use permits and the harvest of Christmas trees, boughs, edible mushrooms and firewood). Species covered by these ***programmatic consultations*** include the bald eagle, gray wolf, grizzly bear, marbled murrelet and its designated ***critical habitat***, northern spotted owl and its designated ***critical habitat***, and bull trout. Collectively, over 500 projects were implemented in FY99 on the Gifford Pinchot, Olympic, Mt. Baker-Snoqualmie, and Wenatchee National Forests under existing ***programmatic consultations***. We also completed 60 individual consultations for timber sales, grazing, and water diversions that were outside the scope of existing ***programmatic consultations***.

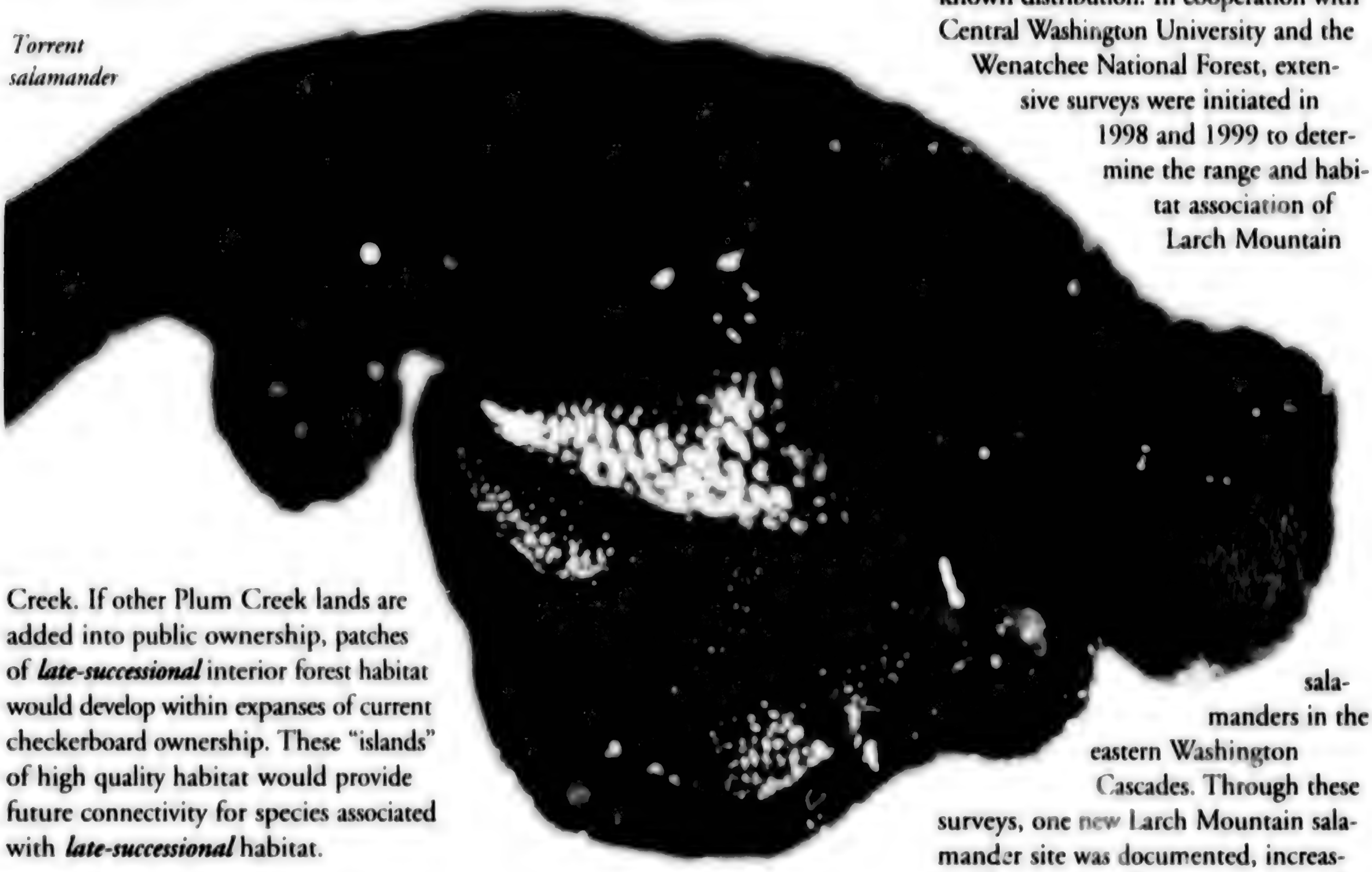
The "I-90 corridor" in central Washington is the site of the Plum Creek/U.S. Forest Service I-90 Land Exchange. The area is one of the narrowest east-west expanses of public ownership within the range of the spotted owl. Land ownership is "checkerboarded" by alternating sections (a section is 640 acres) of public and private lands. The ability of wildlife to move safely across this area is severely reduced by the size, continuity, and use of I-90; past timber management on private and public lands; natural geographic barriers such as large lakes; and other development along the interstate. Numerous ***lanscape-level analyses***, including the ***NWFP***, determined that improving biological connectivity through the I-90 corridor is critical to long-term ecosystem health.

Most of the private land in the I-90 corridor is owned by Plum Creek Timber Company (Plum Creek). In 1995, the U.S. Forest Service offered to trade publicly-owned lands west of the Cascade Crest to Plum Creek to "block-up" ownership in the checkerboard area along the I-90 corridor. We participated in the evaluation of the ecological value of about 88,000 acres of public land proposed for consideration in the land exchange. Although about 10,000 acres of public land determined to be critical for achieving landscape-level connectivity along the Cascade Crest was removed from the exchange, Congress later passed the I-90 Land Exchange Act of 1998.

The 1998 Act also created a 5,700 acre Kelly Butte Special Management Area west of the Cascade Crest that will enhance marbled murrelet and spotted owl ***recovery***. In the final agreement, several potential public land exchange parcels were removed due to ***old-growth*** issues. To equalize the loss of those public lands from the exchange, 29 parcels of Plum Creek land were removed from the direct exchange. Eight parcels will be held in escrow for three years and 21 parcels will have harvest delayed for up to four years. Several environmental organizations are working toward obtaining these lands for public ownership at an estimated cost of $20 million.

Marbled Murrelet juvenile

The I-90 land exchange will secure a ***wildlife corridor*** between Kachess and Cle Elum Lakes, extending public ownership closer to the north and south sides of I-90. Several key parcels could be added to the National Forest if the escrow lands are purchased from Plum Creek. If other Plum Creek lands are added into public ownership, patches of ***late-successional*** interior forest habitat would develop within expanses of current checkerboard ownership. These "islands" of high quality habitat would provide future connectivity for species associated with ***late-successional*** habitat.



Torrent salamander

FWS staff administered several internally and externally-funded research projects involving approximately 400 person-days and $80,000 in 1999. These projects were designed to address data gaps that needed to be filled to provide meaningful conservation efforts for several species.

Through these efforts:

- We secured funding to conduct a radio tracking study of bull trout to determine their habitat use and migratory patterns in the Wenatchee River Basin.

- We participated in bull trout spawning and snorkeling surveys in coordination with the U.S. Forest Service, the Washington Department of Fish and Wildlife, and local fly fishing groups. We will use this information to determine population trends, document use areas, and gain a better understanding of the habitat parameters used by bull trout.

- In cooperation with the Wenatchee National Forest, the Washington Department of Fish and Wildlife, and the Washington chapter of The Wildlife Society, we also conducted the first army cutworm moth investigation in the North Cascades. Because of the moth's importance as a food source for the ***threatened*** grizzly bear, the documentation of the presence of army cutworm moths may assist our efforts to detect grizzly bears in the North Cascades, and aid in grizzly bear ***recovery*** planning.

- In 1994, the discovery of a Larch Mountain salamander, a survey and manage species under the ***NWFP***, in the eastern Washington Cascades extended its known range — and the need to manage for it — over 100 miles north and east of its former known distribution. In cooperation with Central Washington University and the Wenatchee National Forest, extensive surveys were initiated in 1998 and 1999 to determine the range and habitat association of Larch Mountain salamanders in the eastern Washington Cascades. Through these surveys, one new Larch Mountain salamander site was documented, increasing the number of known sites east of the Cascades to four.

- One of the largest ***maternity colonies*** of Townsend's big-eared bats (a federal species of concern, a U.S. Forest Service sensitive species, and a state ***candidate species***) in Washington is located in a dilapidated building, currently scheduled for removal, near Mazama. In cooperation with the Okanogan National Forest, Washington Department of Fish and Wildlife, Washington Department of Natural Resources, Eastern Oregon University, and Bat Conservation International, we conducted a study of the habitat use by this ***maternity colony*** to determine the range of environmental conditions and physical features present at this site. This information will be helpful in designing an alternate roost site if the building is removed.

- We assisted the Wenatchee National Forest, Gifford Pinchot National Forest, Washington Department of Fish and Wildlife, and volunteers in surveying for Canada lynx using a newly-developed protocol in which animals are attracted to a baited scent pad designed to "snag" hair from them as they rub against it. Analysis of the collected hairs will determine what species rubbed against the pad. Information gained from these surveys will improve lynx habitat mapping and increase our knowledge of lynx in the Washington Cascades.

FWS biologist teaching elementary school students how to determine the age of trees

The ***WWO*** conducts ***ESA*** section 7 ***compliance monitoring*** to verify that federal projects are carried out in the manner and to the extent identified in project proposals, and that all terms and conditions are implemented as mandated in Biological Opinions.

Similarly, we participate in ***NWFP*** inter-agency ***implementation monitoring***, in which U.S. Forest Service projects are monitored to determine whether they were implemented in a manner consistent with the standards and guides in the ***NWFP***. These monitoring efforts are an integral part of the ***adaptive management*** nature of the ***NWFP***. Projects monitored on the Wenatchee, Okanogan, and Gifford Pinchot National Forests included timber sales, recreation and restoration projects, and special use permits. In 1999, we monitored approximately 10 projects in the field for section 7 and ***NWFP*** compliance. While most projects were completed as proposed, approximately 15 percent of the projects were implemented in a manner that was not consistent with applicable terms and conditions of the ***NWFP*** and resulted in relatively serious effects to natural resources. Accordingly, we have changed how similar projects will be reviewed and implemented in the future.

Other projects were "monitored" in the office by reviewing contracts or reporting forms to determine compliance. Through this approach, we were able to determine that the Gifford Pinchot National Forest was in non-compliance on 15 timber sales because mandatory terms and conditions for operating outside of the spotted owl nesting season were not being implemented. The Gifford Pinchot National Forest stopped operations on these timber sales and requested re-initiation of consultation.

Our monitoring efforts also identified that approximately 30 projects, primarily road maintenance and road restoration activities implemented during 1999 on the Gifford Pinchot National Forest, were not in compliance with their bull trout ***programmatic consultation***. The Gifford Pinchot National Forest voluntarily ceased all activities that had the potential to affect bull trout until reinitiation of consultation could be completed. We also discovered that approximately 20 percent of the projects implemented on the Olympic and Mt. Baker-Snoqualmie National Forests were not in compliance with existing consultations. As a result of these non-compliance issues, the ***FWS*** has been working with the U.S. Forest Service to establish operating procedures to reduce, and hopefully eliminate, these situations from occurring in the future.

Challenges: FY 2000 and Beyond

The Chief of the U.S. Forest Service has stated that recreation management may be one of the greatest challenges facing today's managers of the nation's public forests. All of the National Forests under the ***NWFP*** in Washington are considered either "urban forests," due to their close proximity to metropolitan areas, or receive high recreational use. The enormous demand for public recreation opportunities is driving up the need for trail, campground, and road maintenance and construction. It is also creating controversy and conflicts about the types and location of various types of recreation demanded by the public, such as off-road vehicles versus non-motorized trails, and wilderness versus developed recreational areas. Recreational demands are expected to continue to increase as population levels in the Northwest increase.

Currently, the direct, indirect, and cumulative impacts of recreation on ***listed species*** residing on our National Forests is largely unknown, but may be significant, especially in sensitive areas. We believe landscape-level planning to meet both the recreational demands of the public and the needs of sensitive species will be critical for future management of our National Forests, creating new challenges for both the ***FWS*** and U.S. Forest Service.

Due to budget and staffing reductions on all National Forests under the ***NWFP*** in Washington, along with recent and potential listings of ***threatened*** and ***endangered species***, our role as a partner in ***NWFP*** project planning and implementation will increase to address the multitude of project-related impacts to ***listed species***. We are placing greater emphasis and leadership in habitat-based analyses to assist in the management of ***listed*** and sensitive species. The challenge will be to apply current technologies and conservation principles while still retaining and monitoring on-the-ground knowledge.

An additional challenge is to maintain good working relationships with the Wenatchee National Forest and Okanogan National Forest as they merge into one management unit. With the merger, management and consistency issues become extremely significant. Our challenge is to remain consistent to the species needs and flexible enough to do the best thing for the resource.

We have been working cooperatively with the Wenatchee and Okanogan National Forests on resolution of water resource issues since the listing of bull trout. During this time, state and federal resource agencies, and local water diversion groups have met to develop solutions for addressing water diversion issues across public lands. Through these meetings, solutions were developed by the water diversion groups and the agencies to reduce effects to ***listed species*** while still meeting agricultural needs. However, issues remain and our continued challenge is to cooperatively find resource solutions that are compatible with agricultural needs.

We have been working with the Gifford Pinchot National Forest to identify appropriate management actions within the Gotchen ***LSR*** as a result of a ***spruce budworm*** outbreak which has caused various levels of tree defoliation and death, making the area susceptible to high intensity, large-scale fires. Because the defoliation is in an ***LSR***, large-scale timber management activities, which might decrease the risk of such fires, are not normally allowed.

We are working with the Mt. Baker-Snoqualmie and Olympic National Forests and the National Marine Fisheries Service ***(NMFS)*** to develop a streamlined consultation process for these National Forests that would minimize effects to ***threatened*** and ***endangered terrestrial*** and aquatic species. When completed, this effort will be the first ***programmatic consultation*** to combine species listed under the ***ESA*** that are administered by both the ***FWS*** and ***NMFS***.

Recreational use is a growing concern, creating new fish and wildlife management challenges.

Division of Environmental Contaminants

Tacoma's Commencement Bay

The Western Washington Office Division of Environmental Contaminants is on the front lines in the fight against pollution. We specialize in detecting toxic chemicals and addressing their effects to prevent harm to fish, wildlife and their habitats. When prevention is not possible, we work to remove toxic chemicals and restore injured habitats. Our Environmental Contaminants specialists are experts on oil and chemical spills, pesticides, water quality, hazardous materials disposal and other aspects of pollution biology. Their efforts are integrated into all other ***FWS*** activities.

They regularly work in partnership with other agencies and organizations which have come to rely on their expertise in seeking innovative solutions to contaminants problems. The Division of Environmental Contaminants contains two branches: the Branch of Natural Resource Damage Assessment, which focuses on the restoration of natural resources that were determined to be injured by the release of hazardous substances or oil; and the Branch of Spill Response and Contaminants Cleanup, which focuses on the prevention and response to spills, other environmental contaminant issues and cleanup.

Federal and state agencies, and tribes are ***trustees*** for public lands under their management as well as for the public's natural resources on those lands. Through the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund), and the Oil Pollution Act, the ***FWS*** has a prominent role in the restoration of natural resources injured by the release of hazardous substances or oil. The provision used to restore natural resources under these two acts is known as the ***Natural Resource Damage Assessment (NRDA) and Restoration Process***. This process involves the determination and quantification of injury to natural resources and subsequent ***recovery*** of compensation (damages) from the parties responsible for the oil or chemical release. The ultimate goal of ***NRDA*** and restoration is to return injured resources to the conditions existing before the release through restoration or replacement.

Commencement Bay and the Puyallup River system near Tacoma are home to important fisheries including four salmon species; migratory birds; and several federally-***listed species*** such as chinook salmon, bull trout, and bald eagle. Industrial operations over the last century have introduced many contaminants including metals, pesticides, and other hazardous materials to the estuary, injuring fish and wildlife habitat and placing many of the species at increased risk. The ***WWO*** has been the U.S. Department of the Interior's lead trustee (co-***trustees*** include the National Oceanic and Atmospheric Administration ***(NOAA)***, the State of Washington, and the Puyallup and Muckleshoot Indian Tribes) involved with performing ***NRDA*** and restoration activities in this area since 1991. Currently, we also participate in providing cleanup recommendations and negotiating settlements with the responsible parties.

Settlements for restoring natural resources in Commencement Bay with five Potentially–Responsible Parties, completed since 1991, have a current estimated value of more than $20 million and involve the restoration of approximately 62 acres of fish and wildlife habitat.

- A 1993 ***NRDA*** settlement with the Port of Tacoma included $12 million for conducting habitat restoration projects. In 1999, the ***trustees*** held a public workshop to solicit input on the

Agency personnel meeting with local public and environmental groups on plans for Commencement Bay restoration projects

design of several restoration projects. Final designs for two projects have been completed and their construction is scheduled for the summer of 2000. The Puyallup Nursery Project will create three acres of intertidal salt marsh habitats and provide a source of plant material for future projects. The Hylebos Estuary Project will restore the mouth of Hylebos Creek and provide three acres of important habitat for outmigrating juvenile salmon.

- In 1997, the City of Tacoma agreed to a $7.6 million habitat restoration program as part of a ***NRDA*** settlement. The agreement established a 5-year plan to undertake five restoration projects and provide in-kind services and support, including establishing a pollution reporting hotline, a baywatch program, and providing funds to tribal ***trustees*** for enforcing environmental regulations. These restoration projects involve nearly 38 acres of submerged lands, intertidal areas, freshwater wetlands, streams, and adjacent uplands. Two of these projects are already well underway. The Middle Waterway Project will restore nearly two acres of mudflat, salt marsh and ***riparian*** habitats, all extremely limited in Commencement Bay. It will provide habitat for bull trout, juvenile salmon, marine fish, shorebirds, and waterfowl. Final design for the project has been completed and it will be constructed in the summer of 2000. The Swan Creek Project will permanently protect 12 acres of stream and associated wetland and ***riparian*** habitats, creating additional off-channel habitat and restoring a connection to an existing wetland which will provide important overwintering habitat for juvenile salmon. Design for this project was completed in 1999 and restoration will be constructed in the fall of 2000.

- As a result of a 1991 settlement with Simpson Tacoma Kraft and Champion International, a three-acre pilot restoration project consisting of mudflat, salt marsh and ***riparian*** buffer habitat was constructed in the Middle Waterway in 1995. ***Adaptive management*** actions were completed this year in cooperation with the Nisqually National Wildlife Refuge to promote the establishment of salt marsh. Together, we provided soil amendments and anchored ***large woody debris*** to provide protection against erosive wave action, improving conditions for the establishment of salt marsh habitat. These actions will also provide important information for future projects.

Like Commencement Bay, the Elliott Bay estuary near Seattle and the Duwamish River system which feeds it, support ***trust resources*** which have been substantially affected by decades of discharges of industrial and municipal waste. This aquatic system serves as a migratory route, nursery, and transition zone for several important fishery species, including flatfish, four salmon species and several federally-***listed species*** including chinook salmon and bull trout. The estuary is also important habitat for migratory birds including the federally-***listed*** bald eagle.

- Through the ***NRDA*** process, a $24 million settlement was obtained from the City of Seattle and King County in 1991 for injuries associated with releases from sewer outfalls into the bay and river. The $24 million from the 1991 settlement is being directed to reducing or eliminating release of hazardous substances from sewer outfalls, ***sediment*** remediation, and habitat restoration planning and implementation in Elliott Bay, the Duwamish River and its tributaries. We chair the Habitat Restoration Work Group, which was established to address aquatic habitat restoration and are working with the ***NOAA***, the State of Washington, and the Suquamish and Muckleshoot Indian Tribes to develop restoration projects. Four intertidal habitat restoration projects in the lower Duwamish River are already in the implementation phase. Construction on two of the four projects began this year. The Seaboard Lumber Project will provide two acres of intertidal habitat and about three acres of ***riparian*** vegetation, and interpretive facilities. The Hamm Creek Estuary Project will involve the reconstruction of about 2,700 linear feet of stream channel and construction of a two-acre intertidal site at the mouth of Hamm Creek.

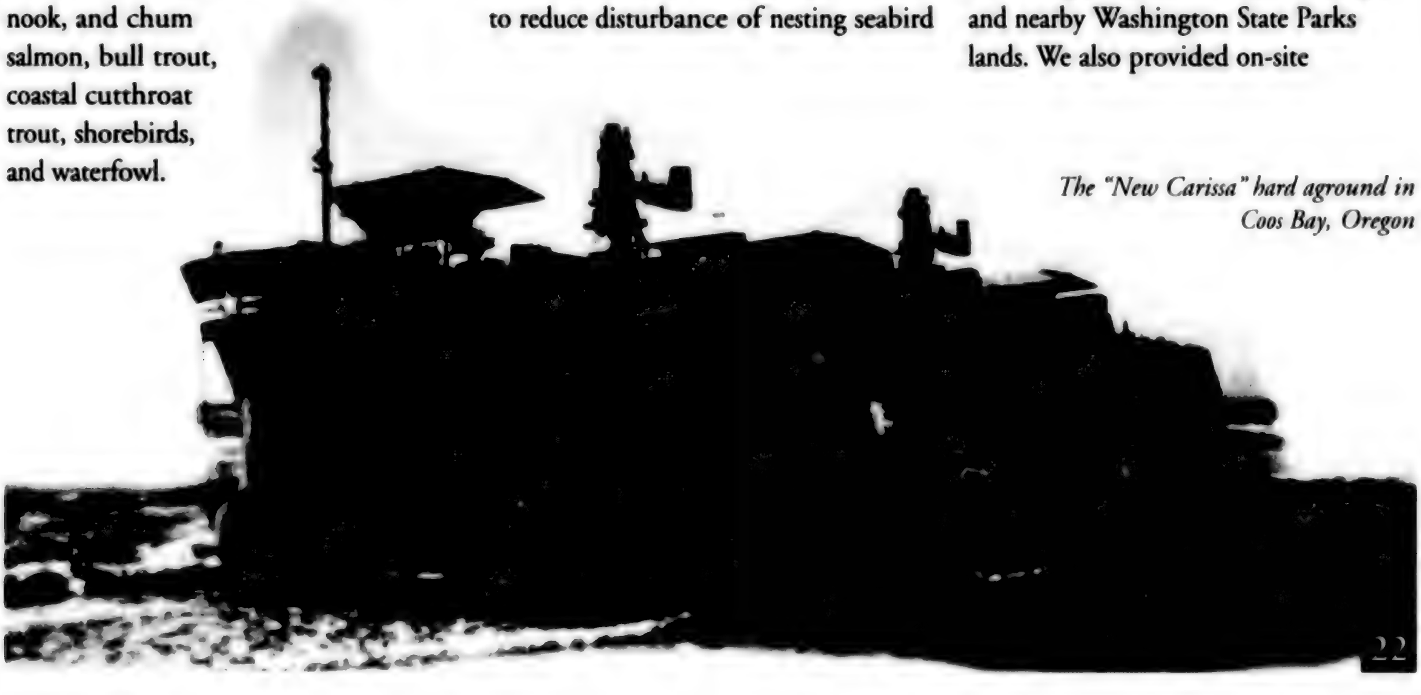
- We are working with the other ***trustees*** to pursue additional ***NRDA*** settlements and provide cleanup recommendations for the remainder of the effected area of the lower–Duwamish River.

- In the Snohomish estuary near Marysville, we are participating with other ***trustees***, ***NOAA***, Washington Department of Ecology, and the Tulalip Tribes of Washington in ***NRDA*** settlement negotiations with ***Potentially Responsible Parties*** associated with the Tulalip Landfill Superfund site. Funds from a partial settlement in 1998, were used to implement the Qwuloolt restoration project in the Snohomish Estuary. This project is a cooperative venture between the Natural Resources Conservation Service and the ***trustees*** which, when completed, will restore a chinook spawning stream and provide habitats for coho, chinook, and chum salmon, bull trout, coastal cutthroat trout, shorebirds, and waterfowl. This year, other partial settlements added more than $675,000 to the current restoration project funding. Nearly $390,000 in federal grant funding to our state trustee will be used as matching funds to assist with the purchase of an additional 20 acres for the existing restoration project.

- In 1999, we prepared and distributed for public comment a Draft Restoration Plan and Environmental Assessment to restore seabirds and kelp that were injured in the 1991 Tenyo Maru Oil Spill. The public provided comments to the ***trustees*** on how best to use the $5.2 million restoration funds that were received through settlement under the ***NRDA*** regulations. The ***trustees*** include the ***NOAA***, the Department of the Interior, the State of Washington, and the Makah Tribe. The plan describes a number of projects designed to restore the injured natural resources through population and habitat protection and enhancement. The proposed projects include: marbled murrelet habitat protection, reduction of silt into rivers and the ocean to improve kelp habitats, restoration of common murre colonies in the Copalis National Wildlife Refuge, funding to help establish an oiled-wildlife rehabilitation center, and educational outreach to reduce disturbance of nesting seabird colonies. The plan will be finalized by spring 2000.

The risk of oil spills in Washington is very high. More than 800 oil tankers pass through Puget Sound every year. These vessels carry millions of gallons of oil through very treacherous areas and often during hazardous wind and sea conditions. They present a very real danger to fish and wildlife resources. To be prepared in the event of a spill, we work closely with state and federal counterparts to improve the efficiency of the ***Incident Command System*** used to coordinate multi-agency response to oil spills. We participate regularly in spill drills to test response efficiencies. We also serve on a team of federal and state agencies and tribes investigating the possibility of pre-approving the use of ***oil dispersants*** in the marine waters of Washington. We collaborate with other federal and state agencies and oil industry representatives along the entire West Coast to develop working relationships and efficient protocols which can be implemented immediately in the event of a spill.

Two response events involved oiled seabirds and oil globules washing ashore in southwest Washington, on or near the Willapa National Wildlife Refuge and nearby Washington State Parks lands. We also provided on-site



The "New Carissa" hard aground in Coos Bay, Oregon

On June 10, 1999, 277,000 gallons spilled from a pipeline rupture caused a disastrous fire on Bellingham's Whatcom Creek, killing three people, thousands of juvenile salmon, and other aquatic life.

> *In 1999, we were involved with on-site response activities for four oil spills in an effort to improve protection of fish and wildlife resources and to collect evidence of wildlife losses.*

response activities during the New Carissa vessel grounding in Oregon and the Whatcom Creek gasoline spill and fire in Bellingham, Washington. We provided ***NRDA*** support in the early phases of these events to secure information crucial to accurately assessing natural resource injuries and determining sufficient restoration.

Challenges: FY 2000 and Beyond

With the recent listing of the bull trout in western Washington, we face new challenges in both the ***NRDA*** and restoration arenas. The Commencement Bay and Elliott Bay systems are believed to support bull trout and efforts will begin this year to determine how contaminants may be affecting the species.

As lead trustee for wildlife resources in the Elliott Bay/Lower Duwamish River ***NRDA***, we will also pursue information regarding the potential impact of contaminants on birds using the area. Information collected for bull trout and migratory birds will be weighed against any future ***NRDA*** settlements to ensure appropriate restoration for these ***trust resources***. Efforts can then be directed toward accommodating the habitat requirements of these particular species in future restoration actions.

Division of Federal Activities

The primary role of the Western Washington Office Division of Federal Activities is to assure that fish and wildlife resources are protected as development occurs along our rivers, streams, lakes, marine waters and wetlands. Our authority to serve in this advisory capacity is provided by the Fish and Wildlife Coordination Act as amended in 1958. Through this act, Congress requires all federal agencies involved in construction, funding, permitting or licensing water development projects to consult with and seek the advice of the Fish and Wildlife Service to avoid and mitigate impacts to fish, wildlife and their habitats. We work closely with developers, representatives of federal, state, and local agencies, Indian tribes, non-governmental groups, and private citizens from the early conception and planning stages, through construction, and into operation of the project.

Three federal programs generate the majority of our work; the U.S. Army Corps of Engineers' (Corps) Civil Works Program, the Corps' wetland permits program, and the Federal Energy Regulatory Commission's hydropower licensing program.

U.S. Army Corps of Engineers Civil Works Program

The Corps' Civil Works Program encompasses a wide range of water-related development activities, including flood control, hydropower and water supply dams, shoreline protection, and dredging for navigation.

These projects have historically resulted in significant damages to fish and wildlife resources. Changing attitudes and values have resulted in projects that are not only less damaging, but frequently incorporate features that restore or enhance existing natural resource conditions by improving water and ***sediment*** quality, increasing flows in rivers and streams, enabling the passage of fish through and around barriers, and improving habitat conditions.

The projects in this report illustrate how the Western Washington Office has worked closely with the Seattle District, Corps of Engineers, to protect and enhance our natural heritage.

The cleanup of contaminated urban bays has typically been an arduous, time-consuming, and costly process. Conflicting needs, varying regulations, and differing values of local, state and federal agencies, environmental groups, ports, industries, and tribes have all contributed to the difficulty of achieving timely, cost-effective cleanup. There have been many unresolved questions. How do we ensure habitat needs for salmon in areas that are important to economic development? What level of cleanup is protective of fish and wildlife? Where does it make sense to protect habitat from further development or to restore degraded habitat?

Many areas in Puget Sound contain contaminated bottom ***sediments***. Marine organisms ingest these contaminates and send them in increasingly concentrated form through the food web. Finding a way to safely remove these contaminated bottom ***sediments*** is a high priority for many resource agencies, including the ***FWS***. We are working closely with the Corps, Washington State, and other interests on two efforts to devise an approach for handling contaminated ***sediment*** in Puget Sound and to construct one or more facilities that can confine or treat these ***sediments***.

The first of these efforts is the Multiuser Disposal Facility, a Corps-led effort to find an appropriate means for various interests to pool their resources (and their contaminated dredged

FWS Western Washington Office biologists working during dam re-licensing to improve fish passage

Constuction at Deepwater Slough in preparation for dike breach restoration. Photo: Pat Cagney, USCOE

material) in a safe, environmentally suitable, and economically acceptable disposal site. A recent ***environmental impact statement (EIS)***, produced by the Corps with support from the ***FWS***, established the need for a multiuser facility and identified a number of technically feasible solutions. One exciting solution identified in the document and supported by the ***FWS*** involves treating the dredged ***sediment*** to remove the toxic compounds, and then using the clean ***sediment*** to make concrete, top soil, or glass.

In the second effort, the Bellingham Bay Pilot Project, we have joined with other interests to clean up numerous contaminated sites and address source control, habitat restoration and preservation, and land use guidelines for future development. To test the feasibility of treatment as a way of handling contaminants in Puget Sound, a portion of the ***sediments*** will be removed and incorporated into a "treatment pilot project".

Flood hazard reduction and improving habitat for fish are two goals that have until recently seemed incongruous. Traditional methods of flood reduction have often been disastrous for fish and wildlife as rivers have been channelized, directed between levees, and prevented from spreading out over the flood plain. But newer approaches have focused on restoring ***floodplain*** form and function by relocating structures out of the ***floodplain***, restoring wetlands, reconnecting old river meanders or ox-bows, re-establishing ***riparian*** buffers, and moving levees back so the river can spread out. All of these methods are much more supportive of the needs of fish and wildlife that depend upon naturally functioning riverine systems than the traditional methods.

The Western Washington Office is working on two Corps' studies with the goal of improving habitat conditions while reducing the frequency and extent of flood events. As participants in the planning process for the Chehalis River Flood Hazard Reduction Project, we have pushed for the fish-friendly approaches previously mentioned and have urged the Corps and local sponsors to include environmental restoration as a project goal. Many species of fish would benefit from restoration, including chinook and coho salmon, steelhead, bull trout and coastal cutthroat trout.

Frequent flooding along the Skokomish River, as well as the presence of several ***listed*** salmon and trout species, has resulted in Congressional funding for the Skokomish River Flood Reduction Assessment to address hazard reduction and ecosystem restoration in that basin. We have been active participants in the review and development of measures to meet these goals. In 2000, we will be responsible for preparing a Fish and Wildlife Coordination Act report to address impacts and opportunities that the various solutions may present.

Section 1135 of the 1986 Water Resources Development Act is the Corps' authority to fix resource problems at existing federal projects. Often, the full effect of proposed projects such as dams, levees, and dredging, is poorly understood at the time of construction or is difficult to quantify. In recognition of this, Congress enacted legislation in 1986 that authorizes the Corps to go back and correct fish and wildlife resource problems that were caused by or are related to original construction. We have worked with the Corps and other groups to identify the most serious problems and to develop solutions.

Our 1999 accomplishments include:

- Salmon and steelhead trout passage improvements at the Lake Washington Ship Canal and Locks to benefit juvenile fish on their migration to Puget Sound, and at a weir on the Sammamish River to help migrating adult fish;

- The use of additional water storage at Howard Hanson Reservoir to increase flows in the Green River during periods of low rainfall;

- The restoration of habitats, including estuarine wetlands, tidal sloughs and the riverine corridor in the Green-Duwamish, Lake Washington, and Stilliguamish Basins.

Habitat restoration under the section 1135 authority is an ongoing effort. Our efforts will expand in the coming year to address some of the larger problems, including the lack of connectivity of the river to its ***floodplain***, the armoring of stream banks, and the interruption of the supply of gravel needed to replenish spawning habitat.

Our recent work toward removal of a dam on Goldsborough Creek is another example of how federal, state, and private partners can work together to improve conditions for fish and wildlife. Goldsborough Creek runs through the City of Shelton and empties into Puget Sound. Built in the late 1800s, the dam has been used at various times for storing logs, for hydropower, and for water supply but is no longer used for anything. Unfortunately, the dam has prevented salmon from ascending the creek, blocking 22 miles of good spawning and rearing habitat. The ***FWS*** has teamed up with Simpson Timber Company, the Washington Department of Fish and Wildlife, and the Corps to remove the dam during the summer of 2000. Once the dam is removed, chinook, coho, and chum salmon and steelhead and cutthroat trout will once again be able to ascend the stream — after a 100-year absence.

Corps of Engineers Permit Program

Two pieces of legislation, the ***Clean Water Act*** and the Rivers and Harbors Act, authorize the Corps to require permits before fill or structures can be placed in wetlands and other waters of the United States. Permits are required even for small projects — such as private docks and bulkheads — which may have minor individual effects but great ***cumulative effects***, as well as for major projects such as highways, marinas, and housing developments. Staff members of the Division of Federal Activities work closely with the Seattle District, Corps of Engineers to ensure that protection of fish and wildlife habitats and ***mitigation*** for adverse impacts are included in the design of projects requiring permits. By reviewing several hundred proposals each year and proposing alternative development methods and ***mitigation*** measures, we help protect many hundreds of acres of important wildlife habitat and critical spawning and rearing habitats which would otherwise have been degraded or lost.

During 1999, our office was also actively involved in the development of regional conditions for new and existing nationwide permits, which are permits for categories of activities that are considered relatively minor and of minimal effect. Through our negotiations with the Seattle District, the new nationwide permits will avoid high quality wetland systems and will include protective fish and wildlife measures.

The ***WWO*** staff is also working with the Corps and the ***NMFS*** to develop an ***ESA programmatic consultation*** process for the Corps' permit program and will address federally-***listed*** and proposed fish in Washington, including the recently ***listed*** bull trout. This ***programmatic consultation*** will provide a more expedient means of meeting ***ESA*** requirements, reducing the time required to get a Corps permit while providing adequate protection.

Hydropower Licensing

Hydropower projects in Washington have had enormous impacts on fish and wildlife resources. They block fish from spawning and rearing habitat, kill fish passing through turbines, destroy instream habitat by reducing flows or affecting the quality of water in our rivers, and flood important wildlife habitat along streams and river bottoms. The Federal Energy Regulatory Commission ***(FERC)*** licenses hydropower projects for periods of 30 to 50 years. At the end of the license term, project owners must apply for a new license to continue operating the project. At that relicensing point, the ***FWS*** is authorized by the Federal Power Act and the Fish and Wildlife Coordination Act to recommend, and in some instances, require, changes to the project or its operation to improve conditions for fish and wildlife.

During 1999, the Western Washington Office staff played a key role in several important relicensing actions:

- On the Cowlitz River, three dams operated by Tacoma Power (Mayfield, Mossy Rock, and Barrier Dams), block upstream fish passage to more than 170 miles of ***anadromous*** fish habitat. We are currently devoting a tremendous effort to reach a collaborative agreement with the operators, ***FERC***, resource agencies, and interest groups that could result in re-establishment of self-sustaining runs of ***anadromous*** fish (including two ***listed species***: spring chinook salmon and steelhead trout) above the dams. In addition to participating in over 30 meetings during the year, we prepared and submitted our preliminary terms and conditions and fish passage prescriptions to ***FERC*** and the applicant.

Removal of Condit Dam will begin in 2006.

- Four dams on the Lewis River are also currently undergoing relicensing. These projects block upstream fish passage to over 30 miles of potential salmon and steelhead habitat. They also block passage for resident fish, such as bull trout, at each dam. As with the Cowlitz River relicensing actions, the Western Washington Office has been a very active participant. Our goal for fishery resource improvements is to re-establish ***anadromous*** fish runs above the dams and to reconnect the bull trout populations currently isolated by the dams. Our goal for wildlife is the acquisition of several thousand acres of terrestrial habitat that would be managed for a wide variety of wildlife. During 1999, members of our staff have participated in three different committees, and have worked with the applicant and other participants to develop studies that address our concerns about project impacts.

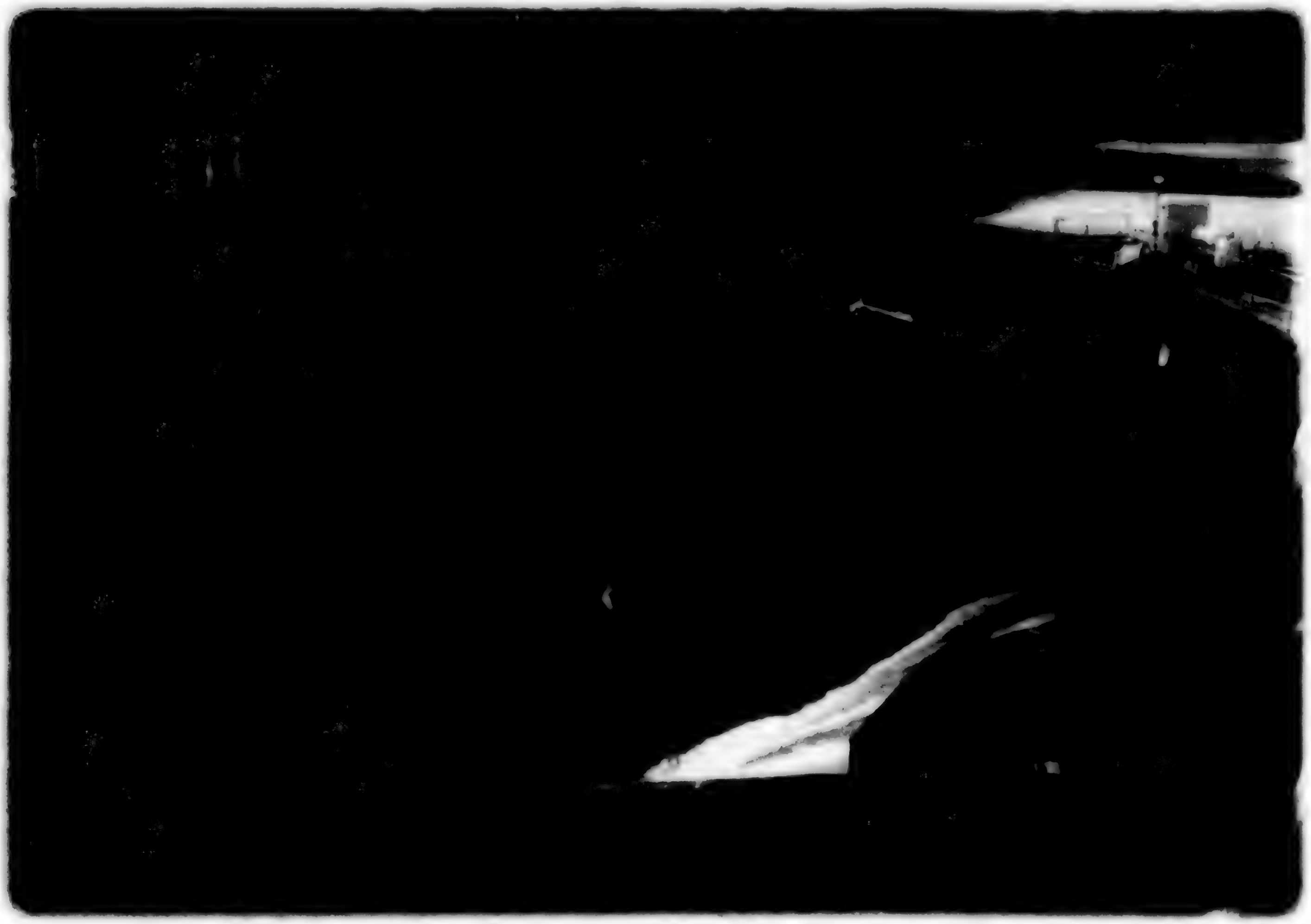
- The Condit Dam on the White Salmon River is another relicensing effort with a unique twist. After more than a decade of working together with other federal and state resource agencies, affected Indian tribes, environmental groups and PacifiCorp, the owner of the Condit Hydroelectric Project, we finally reached agreement this fall on a plan for restoring salmon, steelhead and bull trout populations to the White Salmon River. Staff from the Division of Federal Activities played a key role in the development of fish protection measures that ***FERC*** included as conditions of the new operating license. PacifiCorps considered the cost of the measures, the limited power produced by the project, and the age of the facility, and decided that dam removal was a better option. Under the terms of the recently signed settlement agreement, PacifiCorp will be allowed to operate the Condit project for an additional seven years in return for funding the removal of the dam in 2006. After the dam is removed, chinook and coho salmon, steelhead and coastal cutthroat trout, bull trout, and Pacific lamprey would again have access to 20 miles of spawning and rearing habitat that has been blocked since 1912.

Challenges: FY 2000 and Beyond

In recent years, the emphasis of Corps projects has shifted away from traditional high-impact projects and has begun to focus increasingly on solutions that are more protective of our environment. Many Corps projects now include environmental protection and habitat restoration as a primary purpose or as key components of the project. As partners in the Corps planning process, we will help them identify, develop, and implement projects that will produce the greatest benefits to natural resources.

Washington's expanding population and increasing urbanization will continue to put great pressure on our wetlands, streams, and ***riparian*** zones. The Corps' permit program will continue to be an important tool for protecting these vital resources. Many actions requiring Corps permits are quite small, and while they may not have significant individual consequences, the cumulative impacts of these projects can be devastating to fish and wildlife resources. We will continue to work with the Seattle District to address the cumulative and individual impacts of permits to maximize protection for natural resources and facilitate quick permit decisions.

The hydropower industry is changing rapidly. Increasing environmental concerns (particularly because of the plight of migratory salmon and trout), the availability of new competing generation technology which produces less expensive electricity, deregulation of the industry which facilitates the transmission of cheap electricity across the nation, and the aging of the existing projects have all affected the viability of hydrogeneration. As a result, there have been few proposals for new projects in Washington over the last several years, and the emphasis has shifted to those existing projects whose licenses are expiring after 50 or more years. We now have an opportunity through the relicensing process to obtain ***mitigation*** features, such as fish passage, adequate instream flows, and habitat restoration, for projects that were built before those measures were required. Retrofitting these old projects, however, is difficult and expensive. The challenge facing the industry, the regulators, and the environmental community is to find ways to accomplish that ***mitigation*** without destroying the economic viability of the project.



Glines Canyon Dam on the Upper Elwha

Division of Watershed Protection and Restoration

The Western Washington Office Division of Watershed Protection and Restoration includes several programs which offer cost-share funding and technical assistance to landowners and land management agencies, salmon enhancement groups and other non-profit organizations, tribes and other agencies to protect and restore fish and wildlife habitat. Our staff provides the biological, hydrological, geological, engineering, and construction expertise needed to evaluate watershed conditions and plan, design, build, and monitor restoration projects aimed at restoring watershed health. Because we work only with voluntary partners who wish to restore and protect fish and wildlife habitat on their properties, landowners and land managers in urban as well as rural settings are the keys to our success. Although we work closely with a wide variety of partners to help restore habitat for the Pacific Northwest's imperiled bull trout, salmon, steelhead, native trout stocks and a host of ***terrestrial species***, we emphasize restoration projects that help restore overall watershed health for the long-term and benefit a diverse array of fish and wildlife species.

Chehalis Fisheries Restoration Program

The Chehalis Fisheries Restoration Program ***(CFRP)*** was born of the "Chehalis River Basin Fishery Resources Study and Restoration Act of 1990." Its goal is to restore the salmon fishery in the Chehalis River/Grays Harbor watershed over the proposed 20-year life of the program.

We began restoration projects in 1993, after we completed a habitat degradation study of the watershed, and published restoration recommendations. Our basic strategy is to target streams that are in relatively good condition, help landowners along those streams protect functioning habitat and prevent any further degradation while we pursue active restoration efforts to help improve degraded habitat.

Through this program, we provide funding to cooperating partners in the Chehalis River/Grays Harbor watershed including state and county agencies, tribes, Conservation Districts, schools, and citizen groups.

Our education efforts include landowner workshops, individual site visits with landowners, and funding and submissions for Drops of Water, a monthly newsletter with a circulation of 45,000 households in the Chehalis watershed.

Our on-the-ground habitat protection and degradation prevention efforts include streamside livestock exclusion fencing and alternative livestock watering sources, and improvements to logging roads to re-establish more natural water and ***sediment*** movement. Our restoration efforts include tree planting that emphasizes native species, in-stream habitat construction, and restoration of fish passage through artificial barrier removal.

Since the inception of ***CFRP***, with our partners, we have completed approximately 120 habitat restoration, public education, and ***effectiveness monitoring*** projects.

The ***CFRP*** seeks to actively restore conditions that promote good water quality and quantity. We work with timber and agricultural interests from top to bottom in a sub-watershed, then carry out monitoring to evaluate expected improvements. One example of this approach is in the Deep Creek watershed

Land owners practice stewardship by planting native tree species with CFRP assistance.

in Lewis County. In 1994, we began working with agricultural landowners, in cooperation with the Lewis Conservation District and the Washington Department of Natural Resources on their timber lands in cooperation with the Chehalis Basin Fisheries Task Force and the Washington Department of Ecology on an ***effectiveness monitoring*** program.

We contributed funds to a ***DNR*** program that improved culverts for fish passage, improved logging roads to lessen fine ***sediment*** inputs to creeks, and eliminated off-road vehicle access to wetland and ***riparian*** areas. We also provided funds to help farmers fence livestock out of the creeks and to replant ***riparian*** vegetation. With Ecology, we shared the cost of designing and implementing a water quality monitoring program to test the results of our work.

We implemented restoration projects on all but one of the streamside properties in the Deep Creek basin — the remaining property was already in good shape. The monitoring program has been in place for six years, and has detected some statistically significant improvements in water quality. We are currently wrapping up this first phase of monitoring and plan to revisit the monitoring program after several more years of riparian zone recovery. We will have final reports from the first phase by mid-2000.

Jobs in the Woods Program

The Jobs in the Woods Program is part of the ***Northwest Forest Plan***'s Economic Adjustment Initiative. The program employs workers displaced by a downturn in the timber industry to implement community-based ***watershed restoration*** projects on non-federal lands. It provides family wages, benefits, and training to workers to diversify their skills while restoring watershed processes and functions which benefit habitats supporting native fish, wildlife, and plant species. Working with partners, we rely on ***Northwest Forest Plan*** guidance, ***watershed analysis***, and site-specific design to ensure quality projects. Biologists provide technical assistance to watershed stakeholders to identify, prioritize, and select ***watershed restoration*** activities. These activities address the causes of watershed degradation, speed up natural ***recovery*** of damaged habitat, and prevent further degradation.

The Jobs in the Woods Program works in selected watersheds for multiple years. By focusing limited funds in only four watersheds at a time, we can maximize ecological and economic benefits and more easily measure their effects. This localized and strategic approach also helps form long-term partnerships, increases predictability for planning, passes restoration interest from neighbor to neighbor, and achieves longer-term employment.

We are currently focusing restoration activities in the Bear River Watershed in Pacific County, the Chewuch-Methow-Twisp Rivers Watershed in Okanogan County, the Hoh River Watershed in Jefferson County and the Nooksack River Watershed in Whatcom County.

Since 1994, when the Jobs in the Woods program began, real on-the-ground accomplishments have been achieved that have benefitted fish and wildlife resources and displaced workers.

- With our partners we have employed and trained more than 200 displaced workers, paying them family wages averaging over $15 per hour plus benefits.
- By leveraging $1.6 million in non-federal dollars with cost-share programs we have been able to complete projects which have reduced ***sediment*** from more than 75 miles of road and trail, fenced 50 miles of stream to improve water quality and protect fish habitat, restored 755 ***riparian*** and upland acres of fish and wildlife habitat, removed barriers to 9 miles of salmon and bull trout habitat and treated 14 miles of instream habitat to increase salmon use.
- We have also improved 500+ freshwater wetland acres and 190 estuarine acres to alleviate flooding and benefit salmon and waterfowl, reclassified over 800 miles of stream to increase habitat protection under state law, assessed 225 miles of stream for artificial blockages to fish passage and monitored and maintained more than 22 miles and 295 acres of restoration projects.

Hydraulic winch is used to place large woody debris in streams, to restore habitat-forming processes.

Watershed assessment identified fine ***sediment*** production, lack of instream ***large woody debris***, and lack of large conifers in ***riparian*** areas as limiting factors in the Bear River Watershed. This information, combined with our Bear River Restoration Plan, was used to identify projects. To accelerate ***recovery*** of natural river processes which create fish habitat, we placed ***large woody debris*** in the river and its tributary streams using a 7.5-ton hydraulic winch that we designed and built specifically for such work. Use of the winch reduced disturbances to sensitive ***riparian*** vegetation, soils, and streambanks. Displaced timber workers used the winch to move the big logs that make up woody debris through ***riparian*** areas and place them in streams. The winch worked so well we produced a training video to demonstrate its use.

This instream work complements other restoration efforts in the watershed, such as re-establishing native ***riparian*** plant communities, controlling excessive erosion from roads and hillsides, and breaching dikes to restore important estuary habitats. Together, these projects address problems throughout the watershed to restore the overall health of the Bear River for the long term, which will benefit in particular, chum, chinook and coho salmon, steelhead, and many other species.

In the Chewuch River Watershed, in Okanogan County, a federal ***watershed analysis*** identified the following as impediments to healthy watershed functioning: accelerated ***sediment*** from roads and bank erosion, lack of habitat complexity due to low amounts of large in-stream wood, loss of side channel habitats and channel processes due to wood cleanouts in the river, reduced recruitment of streamside trees, and low river flows. To address these problems, we employed displaced timber workers to reduce ***sediment*** from road erosion, build livestock fences to protect stream banks and wetlands, plant ***riparian*** vegetation, thin timber and set prescribed fires to regenerate aspen forest stand health, install instream large wood to restore channel forming processes which create fish habitat, and collect monitoring information. Fish species which will benefit from these projects include bull trout, steelhead trout and chinook salmon.

Washington State Ecosystems Conservation Program

The Washington State Ecosystems Conservation Program ***(WSECP)*** was established in 1991 to restore and enhance fish and wildlife habitat on non-federal lands. Through this program, we provide technical assistance and funds to western Washington landowners who voluntarily participate in habitat restoration and protection projects on their properties. Although historically focused in lowland areas to restore wetlands, streams and prairies, we can work on any type of habitat in western Washington.

Displaced workers load sawdust mulch for a restoration site.

Replacement bridge over the Chinook River. The bridge was built from two old flatbed railroad cars.

Because of the numerous willing landowners and through the cooperation of other restoration organizations, agencies, and volunteers, in the past five years we have been able to restore or enhance more than 100 miles of salmon habitat, more than 500 acres of wetlands, and more than 800 acres of native prairie in western Washington.

The Chinook River flows into the Columbia River from Washington near the Astoria Bridge. Like many rivers in western Washington, the Chinook River suffers from loss of a fish and wildlife habitat due to diking, agricultural development, timber harvesting, and gravel mining. Despite this, thanks to willing private landowners who remember the days of abundant salmon and other species in or near the river and an effective and enthusiastic local restoration group, the river has a great potential for restoration. It is home to three runs of salmon currently listed under the ***ESA***, as well as coho salmon and coastal cutthroat trout, which have also been proposed for listing under the ***ESA***. We and our project partners are working to restore the health of this watershed from the upper reaches to the lower estuary, for the benefit of these ***salmonid*** species and other wildlife.

One project already completed is the replacement of a derelict bridge which was constricting the movement of water and spilling gravel into the river with adverse effects on salmon eggs. The landowner enlisted our help, along with staff from the Natural Resources Conservation Service, Sea Resources and other local residents, to replace the bridge. The new bridge is made from two old flatbed railroad cars, placed at the proper elevation to allow high water to flow freely, and covered with a steel deck that will not deposit gravel into the river.

Future challenges in the Chinook River include reducing the amount of ***sediment*** from the forest lands and gravel pit in the upper watershed, reducing the amount of invasive reed canary grass choking the channel and, most importantly, removing a tide gate at the mouth of the river to restore more than 900 acres of tidal wetland.

Thousands of miles of historical salmon spawning streams in Washington are blocked to upstream migrating fish by undersized culverts which prevent their passage. These culverts also upset the natural routing of ***sediment*** and wood through the stream system. After time, the streambed below the culvert is cut lower by the water, and the culvert becomes "perched" too high above the water surface for fish to be able to swim upstream through it. Removing or replacing these culverts to restore fish passage is a common habitat restoration project under the ***WSECP***.

In the Stillaguamish River watershed, for example, by replacing a single undersized and improperly placed culvert, we restored fish access to four miles of high quality spawning and rearing habitat and 10 acres of ***riparian*** wetlands which will provide juvenile rearing habitat for salmon. This effort — a partnership with the landowner, Adopt-a-Stream, Snohomish County Surface Water Management, the Stillaguamish Tribe, and the Snohomish Conservation District — will benefit coho and chum salmon and steelhead and coastal cutthroat trout.

Partners for Fish and Wildlife Program

Through the Partners for Fish and Wildlife Program, we provide technical and financial assistance to private landowners to voluntarily restore fish and wildlife habitats that benefit migratory birds, ***threatened*** and ***endangered species***, and ***anadromous*** fish. The Partners program also attracts both technical and financial support from diverse partners, including other federal agencies, state and local governments, conservation organizations, and private individuals.

During 1999, the Partners program contributed funding and technical assistance for the restoration of a Wetlands Reserve Program perpetual easement encompassing more than 300 acres (more than five miles) of ***riparian*** and associated wetland and upland habitat at the Greenhead Farms in Grays Harbor County.

Private Lands Program

Under the Private Lands Program, we provide technical assistance to U.S. Department of Agriculture agencies in the implementation of several conservation programs, including the Easements and Transfers Program, Wetlands Reserve Program, Environmental Quality Incentives Program, Wildlife Habitat Incentives Program, Emergency Watershed Protection Program, Conservation Reserve Program, Conservation Reserve Enhancement Program, and the Wetland Conservation provision of the Food Security Act (Farm Bill).

Through the Private Lands Program we have worked with the Farm Service Agency (formerly Farmers Home Administration) since 1987 to establish perpetual easements and transfer properties in fee title to state or federal agencies for conservation purposes as part of the Farm Service Agency's land disposal operation.

We are also working closely with the Natural Resources Conservation Service in the implementation of a 1996 Memorandum of Understanding between our agencies regarding the coordinated acquisition of wetlands and other lands associated with the Wetlands Reserve Program, for inclusion in the National Wildlife Refuge System. To date, more than 200 acres have been acquired within the Black River National Wildlife Refuge.

Puget Sound Program

The Puget Sound Program is one of 14 ***FWS*** National Coastal Programs. Collectively, the goal of these programs is to conserve healthy coastal habitats for the benefit of fish, wildlife, and people. Specific objectives of the Puget Sound Program include coastal habitat restoration and protection through initiation of interagency projects, information collection and development on the status of Puget Sound's fish and wildlife and their habitat, and outreach and education to help promote improved stewardship of Puget Sound's natural resources.

Deepwater Slough project design. Red indicates new levees to be constructed to protect waterfowl habitat. Yellow indicates levees to be augmented to protect waterfowl habitat. Grey indicates levees to be breached or abandoned to allow tidal influence to create aquatic habitat for juvenile salmon. Photo: Pat Cagney, USCOE

Through the Puget Sound Program, we implement habitat restoration projects and associated post-project monitoring which includes protection of federally-***listed species*** and species of concern. We also help guide and implement Puget Sound Ambient Monitoring Program activities; increase awareness of issues related to shorebirds and seabirds in Puget Sound; improve understanding of threats to coastal habitats posed by invasive exotic species and assist with their control; and work with volunteer groups to promote citizen stewardship of restoration sites. We participate in addressing trans-boundary (United States/Canada) coastal issues.

Like many of the large river deltas of Puget Sound, the Skagit River estuary has suffered extensive loss of intertidal habitat due to diking and draining for agricultural development. Much of the potential for coastal habitat restoration lies behind dikes that separate these lost habitats from tidal influence and a connection to the estuary.

On Fir Island in the South Fork of the Skagit River, a 400-acre parcel of diked land owned by the ***WDFW*** has been identified as a significant restoration target. After nearly five years of project analysis and planning, restoration of Deepwater Slough began this summer with construction of a new cross-levee and breaching of interior dikes. When the project is completed, 210 acres of diked former tidelands will be restored to tidal influence, leading ultimately to the restoration of salt marsh and mudflat habitat. Puget Sound Program partners on this project include the ***WDFW***, the Skagit System Cooperative, an American Indian fisheries resource cooperative; and the U.S. Army Corps of Engineers, which is contributing nearly $2 million in funds for engineering design, project management, construction, and monitoring. The Puget Sound Program has been instrumental in the formation and maintenance of this partnership, the evaluation of project feasibility, support of preliminary engineering design work, and helping formulate a long-term monitoring plan to evaluate project effectiveness. Success at Deepwater Slough will improve our understanding of restoration benefits to fish and wildlife resources, especially juvenile salmon, and facilitate future dike breach work with willing public and private landowners throughout Puget Sound.

Our Pierce County ***GAP Analysis*** Project illustrates the Puget Sound Program's ability to help local, state and federal planners with difficult land management decisions by providing them with critical fish and wildlife information and planning tools.

Pierce County is a region of rapid growth along the Puget Sound shoreline and extending inland from the City of Tacoma throughout the increasingly urban communities below Mount Rainier National Park. The Nisqually National Wildlife Refuge located at the mouth of the Nisqually River on Puget Sound, in the south end of Pierce County, is increasingly surrounded by residential and industrial development, making for difficult decisions about protecting present holdings and acquisition priorities for future expansion. Pierce County and other government agencies, including the ***FWS***, need localized fish and wildlife information and better planning tools because natural resource conservation is becoming increasingly difficult with the loss of open space.

We have formed a partnership with the Washington Cooperative Fish and Wildlife Research Unit, the Nisqually National Wildlife Refuge and Pierce County to help develop better planning tools for these and other activities. The result was a pilot project to apply the results of the Washington ***GAP Analysis*** Project and the ***WDFW*** Priority Habitat and Species Database to develop an open space plan. This plan includes ***biological diversity*** corridors and linkages, acquisition targets, and restoration priorities for Pierce County. The project builds on previous ***GAP Analysis*** products developed by the Co-op Unit, and will provide a new generation of open space planning tools to assist in natural resource conservation.

Challenges: FY 2000 and Beyond

Our restoration programs are increasingly taking a "headwaters-to-estuary" approach to habitat protection and restoration in watersheds, using all the resources available in our diverse programs. We emphasize restoration projects that attempt to correct causes of watershed degradation, primarily by restoring natural hydrology as much as possible, correcting sources of ***sediment***, and fixing fish passage barriers where appropriate. Our objective is to restore watershed health for the long term and for the benefit of a wide variety of fish and wildlife species. We plan to put even more emphasis on developing our monitoring and evaluation activities to ensure that we continue to apply the best available science in our projects.

Focused, rather than widespread efforts, have proven effective in coalescing watershed partnerships, restoration planning and implementation, and building our watershed partners' trust in the federal government. We will continue to work with partners to prioritize and select focus watersheds for multiyear habitat restoration efforts.

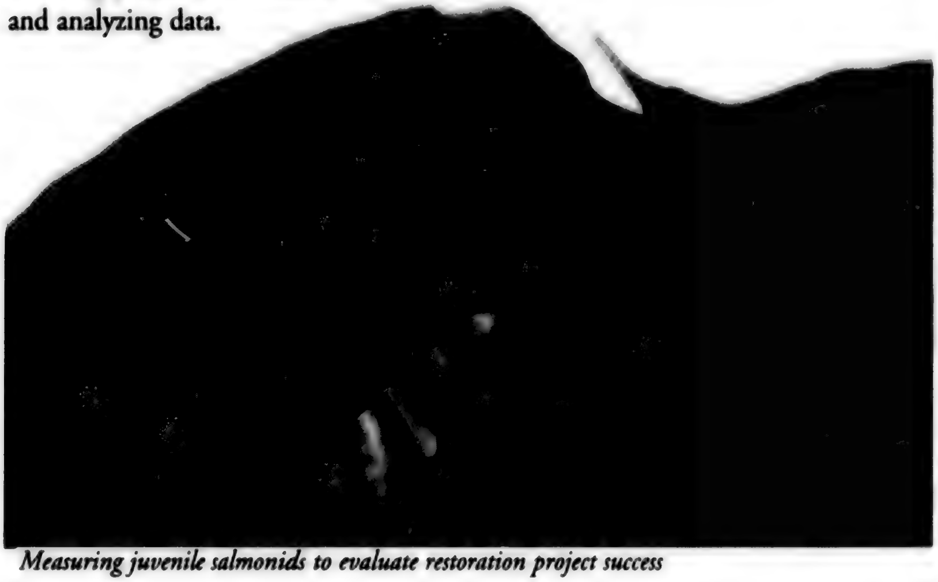
Currently, requests for assistance far exceed available resources, making the selection process especially challenging. We are facing a future where federal and state funding for watershed protection and restoration for salmon ***recovery*** vastly overshadows the funding contributions we can make to such efforts. We will continue to provide cost-share funding for watershed ***recovery*** projects, but we foresee a need to increase our technical assistance to landowners, salmon enhancement groups, agencies, and others to help ensure that the new sources of funding available in Washington for salmon ***recovery*** result in effective projects that contribute to long-term restoration of watershed health for the benefit of all fish and wildlife species.

We plan to develop a handbook describing our approach to ***watershed restoration*** and providing guidance and technical resources for our own programs. We believe this information will be useful to others and plan to coordinate this effort with other programs in the ***FWS*** and with our habitat restoration partners.

Restoration of fish and wildlife habitats requires sound science and careful planning. Sound science requires careful monitoring, and evaluation of completed projects allows us to adaptively manage our programs based on lessons learned and ensures that future efforts achieve desirable results. Through our restoration programs, we can offer all these things, together with a willing attitude and a positive approach to partnerships and cost-sharing. We believe our use of state-of-the-art technology, sound science, careful planning, cost-sharing programs and a watershed-scale approach will make us a lasting influence on the future of fish and wildlife habitat restoration in Washington.

Division of Fisheries and Watershed Assessment

The Division of Fisheries and Watershed Assessment encompasses three vital programs which provide the focus for innovative studies and investigations, and the application of analytical technologies in the Western Washington Office. By combining the services of the Branch of Monitoring and Evaluation, the Branch of Fisheries Assistance and the Branch of Analytical Support, we provide support to other *FWS* Divisions and facilities, including hatcheries, in developing investigations, assessing project effectiveness, and analyzing data.



Measuring juvenile salmonids to evaluate restoration project success

In addition, the Division undertakes the development and conduct of studies to answer fish and wildlife questions important to the management and conservation of natural resources in western Washington.

The Western Washington Office Branch of Monitoring and Evaluation was established in direct response to the need for the *FWS*, as a science-based agency, to continually learn and adaptively manage all of its natural resource activities. We focus our work in two broad areas: field investigations of fish and wildlife, and their habitats; and evaluating the implementation and effectiveness of *FWS* activities, such as habitat restoration and the ***recovery*** of ***endangered species***. These efforts can range from investigations such as assessing the impact of environmental contaminants on our National Wildlife Refuges, to determining the over-wintering habitats of ***anadromous*** adult bull trout in Puget Sound, to verifying the biological effectiveness of the terms and conditions we prescribe in our *ESA* consultations.

Although the Branch of Monitoring and Evaluation did not formally exist in Fiscal Year 1999, ongoing work for the Lake Washington Basin Chinook Studies will continue in the future as part of the Branch's activities. The Flood Damage Assessment of the Impacts of Stream Bank Stabilization on Juvenile Salmon is also typical of the assessments we are conducting.

Projects in 1999 included:

● Located in the large urban area of Seattle, Washington, the Lake Washington basin is home to a population of ***threatened*** Puget Sound chinook salmon. In Fiscal Year 1999, we worked with King County to investigate limiting factors for this chinook salmon population, such as scour of redds, juvenile habitat, predation of smolts, and adult migration behavior.

● In the Lake Washington basin, chinook smolts must migrate through the Lake Washington Ship Canal before they reach saltwater. We investigated the importance of predation on the survival of chinook smolts, which are vulnerable to predators such as bass and northern pikeminnow. We collected over 800 of these predators in the Ship Canal to estimate how many chinook smolts they consumed. Results will assist resource managers in determining what impact these fish predators have on chinook salmon and will provide decision makers with information to guide activities that could inadvertently promote predator populations.

● We also participated in a cooperative project with the *WDFW* and the Muckleshoot Indian Tribe to investigate the behavior and movement of adult chinook salmon in the Lake Washington basin. We tagged adult chinook salmon with ultrasonic transmitters at the Ballard Locks and monitored their upstream movements. Our efforts focused on chinook movement in the Sammamish River, a major tributary of Lake Washington. Key chinook salmon holding pools in this system were identified, which will aid restoration efforts for chinook salmon in the basin.

● The largest component of wild chinook salmon in the Lake Washington Basin spawn in the Cedar River. This river has been significantly altered to accommodate development. We are investigating the influence of river confinement by levees on the stability of chinook spawning habitat. Results will assist resource managers in developing and evaluating habitat restoration plans for this system.

- We also conducted snorkel surveys in the Cedar River to determine the day and night habitat preference of juvenile chinook salmon. Results from this study helped identify many key rearing locations of juvenile chinook salmon. We provided technical assistance to resource managers to determine proper protection and restoration efforts for juvenile chinook salmon.

- Following the severe floods of 1995–96 in the Pacific Northwest, we initiated a Flood Damage Assessment on the Impacts of Stream Bank Stabilization on Juvenile Salmon regarding the influence of different stream bank stabilization methods on fish in western Washington. This project evaluated fish rearing densities near river banks treated with different bank stabilization methods commonly used by flood control agencies in the Pacific Northwest. This work was conducted with flood technical assistance funding, and completes a 3-year evaluation of flood control impacts to juvenile ***salmonids***. We found that ***large woody debris*** supported the greatest salmon and trout densities, and that riprap supported the lowest densities of salmon and trout. We also determined that common methods of mitigating for riprap and rock deflectors were not providing the desired benefits, due to poor design and placement of ***large woody debris*** configurations. Our report provided recommendations to improve the benefits of including ***large woody debris*** in bank stabilization projects. The report was distributed to 150 local, state, tribal, and federal agency personnel throughout Washington, Oregon, and California. Many of these agencies have implemented the recommendations listed in the report. Our personnel have also provided technical assistance to several state and local agencies regarding new bank stabilization projects.

Biologist with Quilicene Summer Chum salmon

- At the request of King County, we provided technical assistance to help them develop a protocol for monitoring county facilities on the Green, Snoqualmie, and Cedar rivers. The county proposes to repair several of their facilities that have been damaged by floods in recent years and needs to monitor these projects to determine impacts/benefits to juvenile chinook salmon in accordance with the ***ESA***. The Branch of Fisheries Assistance evaluates salmon programs at Quinault, Quilcene, and Makah National Fish Hatcheries on the Olympic Peninsula, and works on a variety of salmon ***recovery*** projects involving hatcheries. It also participates in the Pacific Salmon Commission's technical and policy work groups established under the U.S./Canada Pacific Salmon Treaty.

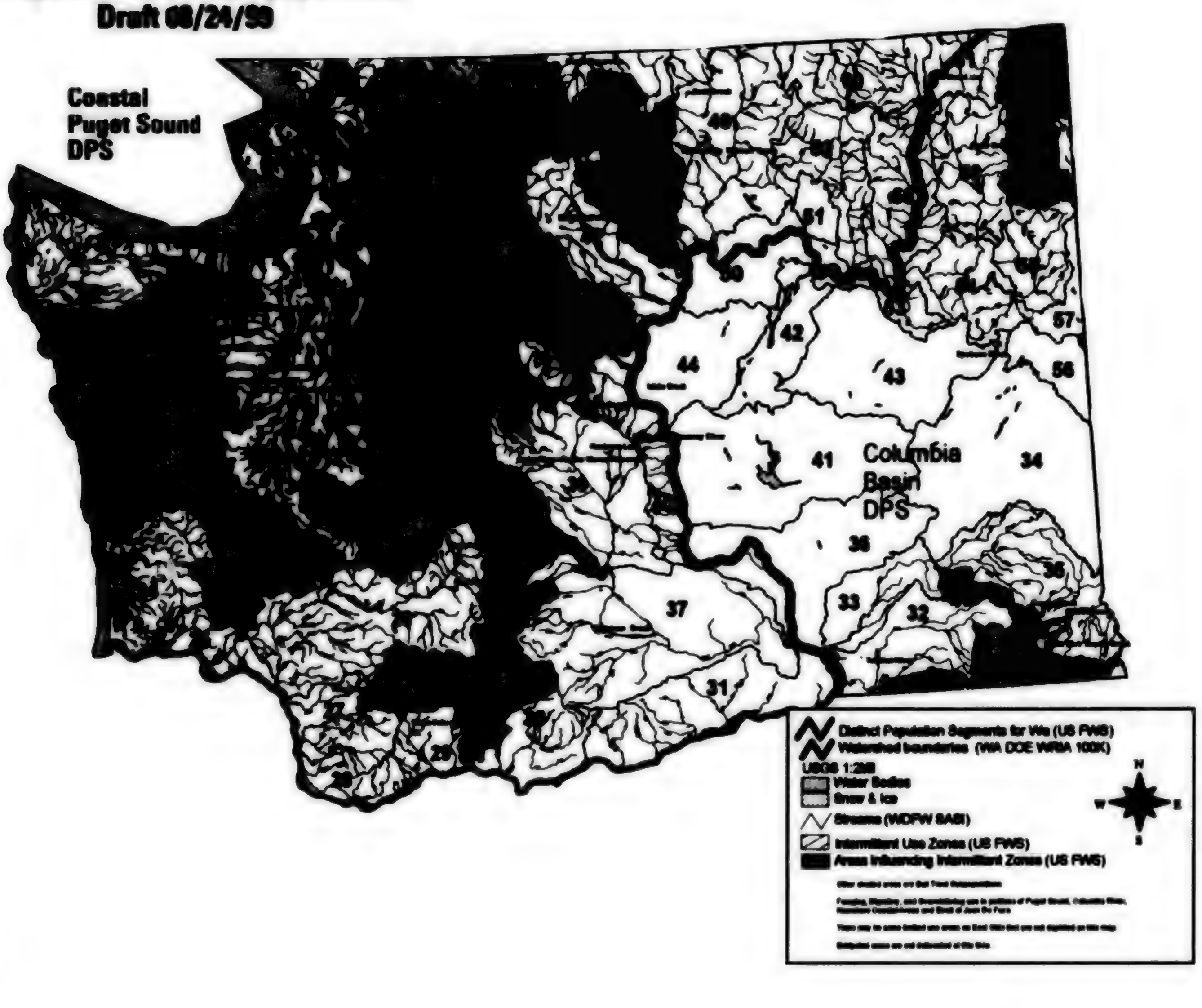
- We are actively involved in the development of new techniques and protocols for ***Selective Fishery*** Modeling as a tool to help fisheries managers harvest hatchery fish while protecting wild runs. Traditional Pacific salmon ocean fisheries harvest mixtures of wild and hatchery fish. This makes wild Pacific salmon vulnerable to incidental harvest in fisheries directed at hatchery runs. This creates a major obstacle to the conservation of wild Pacific salmon because wild salmon runs cannot sustain harvest rates imposed on co-mingled hatchery salmon. Fishery managers, seeking ways to harvest abundant hatchery fish while protecting wild fish, are now marking hatchery-produced coho salmon fry with an adipose-fin clip to allow identification and selective harvest of the hatchery fish.

Unfortunately, unmarked stocks still suffer mortalities from encounters with fishing gear in such selective fisheries. These non-catch mortalities are difficult to quantify because they are, by their nature, unobserved in normal fishery sampling programs. Because current fishery models were not designed to provide estimates of non-catch mortality, fishery managers needed a new set of modeling tools to enable them to negotiate fishing seasons on marked hatchery stocks while minimizing mortality of wild salmon. We have been actively involved for several years in ***selective fishery*** analysis and have led the development of modeling tools to estimate total ***selective fishery*** impacts on coho salmon stocks from Alaska to California. Hopefully, this effort will provide a means to evaluate the impacts of future ***selective fisheries*** on depressed and ***ESA-listed*** salmon stocks in the Pacific Northwest.

- Returns of adult summer chum salmon to Hood Canal and the Strait of Juan de Fuca diminished greatly during the 1970s and early 1980s. Habitat loss, over-fishing, and climatic variation all played their part in the decline. The ***FWS***, the Washington Department of Fish and Wildlife, and the Point-No-Point Treaty Council took action, beginning in 1992, to address the problem. These actions included development of an ongoing summer chum salmon run at the Quilcene National Fish Hatchery in Hood Canal. The Quilcene hatchery run will help stabilize the remaining population of Hood Canal summer chum salmon and serve as a brood source to re-establish one or more summer chum runs in other Hood Canal streams, such as Big Beef Creek. Short-term response to those actions has been favorable but the species still required listing as ***threatened*** by the ***NMFS*** in 1999 to insure its protection and, hopefully, ultimate recovery.

The agencies have cooperatively developed a comprehensive species ***recovery*** plan that will be used by ***NMFS*** in developing a ***4(d) rule*** under the ***ESA***. As indicated in the ***recovery*** plan, improved fishery harvest management, habitat protection and restoration, and reintroduction and supplementation of summer chum using hatchery facilities will ensure ***recovery*** of the species to healthy, fishable levels.

Washington Bull Trout Subpopulations
Draft 08/24/99


Coastal Puget Sound DPS
Columbia Basin DPS
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District Population Segments for Wa (US FWS)
Watershed boundaries (WA DOE WRIA 100K)
USGS 1:2M
Water Bodies
Snow & Ice
Streams (WDFW SASI)
Intermittent Use Zones (US FWS)
Areas Influencing Intermittent Zones (US FWS)
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- As part of our obligations under the Pacific Salmon Treaty, and as part of the ongoing National Fish Hatchery Evaluation, all salmon raised at Quilcene, Quinault, and Makah National Fish Hatcheries are monitored to determine their survival and adult contribution to coastwide fisheries and spawning escapements. In Fiscal Year 1999, we tagged (coded wire tags) or marked over one million juvenile salmon and steelhead and sampled all returning adult salmon and steelhead at these facilities. We also provided data to the Pacific States Marine Fisheries Commission on the 65 million salmon and steelhead that were reared and released from the ***FWS*** hatcheries throughout the West Coast. This information is critically important in monitoring progress of salmon restoration under the Pacific Salmon Treaty, and in managing salmon fisheries coastwide.

The Branch of Analytical Support uses advanced technology, in cooperation with biological staff, to develop tools such as maps, database systems, and statistical analysis to provide biologists and resource managers with accurate and up-to-date informational resources to help them make accurate and timely resource management decisions.

- The recent listing of the bull trout as ***threatened*** under the ***ESA*** has created an increased need for an improved and expanded Bull Trout Analysis and Mapping Program. This ongoing effort to improve bull trout data and develop products to assist in the presentation of data to various public and private entities is very important to our efforts to protect the species. Through this effort, we have developed ***hillshade*** mapping techniques and drafted boundaries for all bull trout ***Distinct Population Segments*** (DPS). We have also revised bull trout ***subpopulation*** areas in Washington and provided statistics on various bull trout inquiries. We are currently working on a bull trout web page to assist in disseminating data, and we are working with various state and federal agencies to improve the present bull trout survey data.

- The ***Habitat Conservation Plan Cumulative Effects*** Analysis was conducted to determine the significance of ***cumulative effects*** for various HCPs in relation to other private, state, and federal land management activities in western Washington. The study included analysis of land cover, forest management strategies, and ***fish-bearing*** stream miles. We developed various map products to assist in determining the best currently available data sources, and computed various statistical products for analyzing ***cumulative effects***. This analysis will be updated periodically as we get better stream and land cover data.

> *Another significant challenge threaded through all our activities is to integrate our efforts with other ongoing monitoring activities to avoid duplication of effort and to maximize use of existing information and data. We will actively seek coordinated data collections and analysis with other government agencies, tribes, universities, and non-government organizations.*

- The Regional Ecosystem Office developed an Interagency Restoration Database system to assist in obtaining spatial data for restoration projects. We have loaded this system in our office and have assisted in testing the product. Although it is very useful, the system still falls short in tracking various database elements which are important to restoration activities. We are looking into the possibility of cooperating with state agencies to develop a system that would be more comprehensive.

Challenges: FY 2000 and Beyond

There is no shortage of challenges for the initial year of the Division of Fisheries and Watershed Assessment. We will work closely with each of the biological programs in the ***WWO***, establishing and testing monitoring protocols for key aspects of each program. Implementation of these protocols by each program is a critical step allowing the ***FWS*** to improve both its own performance and the biological successes of its efforts.

FWS regulatory responsibilities under the ***ESA*** will receive special focus with the development and implementation of monitoring plans for ***Habitat Conservation Plans (HCP)*** and other landowner conservation agreements. With five completed HCPs covering about two million acres of private and state-managed forests, and with another four to six HCPs nearing completion, we will develop and implement an overall compliance-monitoring program for HCPs in Washington. In conjunction with the evaluation of management scenarios on forested lands, we will implement effectiveness and ***validation monitoring*** programs. We expect to focus these programs on resource areas where there is significant risk and lack of information about management impacts. This will require close coordination and communication with monitoring programs developed by industry, state, federal and tribal agencies, and environmental groups. Consistency in methods and data handling will be one of the goals in developing this program to take advantage of larger data sets and allow for comparisons to other geographic areas.

Periodic progress reports will be prepared to document the development of the monitoring program, describe the early stages of implementation of the program, and provide timely results derived from the monitoring.

Technical assistance in all aspects of monitoring (i.e., implementation/***compliance***, effectiveness, validation) to the ***WWO*** biological programs is another of our major goals. Beyond the ***HCP*** efforts, we have been requested to design assessments evaluating the ***FWS watershed restoration*** projects for their biological effectiveness, particularly in the ***recovery*** of ***threatened*** and ***endangered*** fish. A monitoring design to efficiently verify the U.S. Forest Service's regulatory compliance with ***ESA*** consultations under the ***Northwest Forest Plan*** will also be developed.

Another of our major goals is to prepare and conduct timely investigations on critical natural resource issues. For example, to meet the challenge of measuring ***recovery*** progress for ***threatened*** and ***endangered species***, we are developing a variety of special investigations to evaluate the status and biology of the bull trout. Besides conducting basic population surveys, we are designing an evaluation of environmental contaminant impacts on bull trout survival in the urban waterways of Puget Sound. An important key to this study is gaining an understanding of how ***anadromous*** bull trout use estuaries. Our investigations and assessments will not be limited to ***threatened*** or ***endangered species***, but will also address species on which we have scant information, or for which there are concerns about possible population declines.

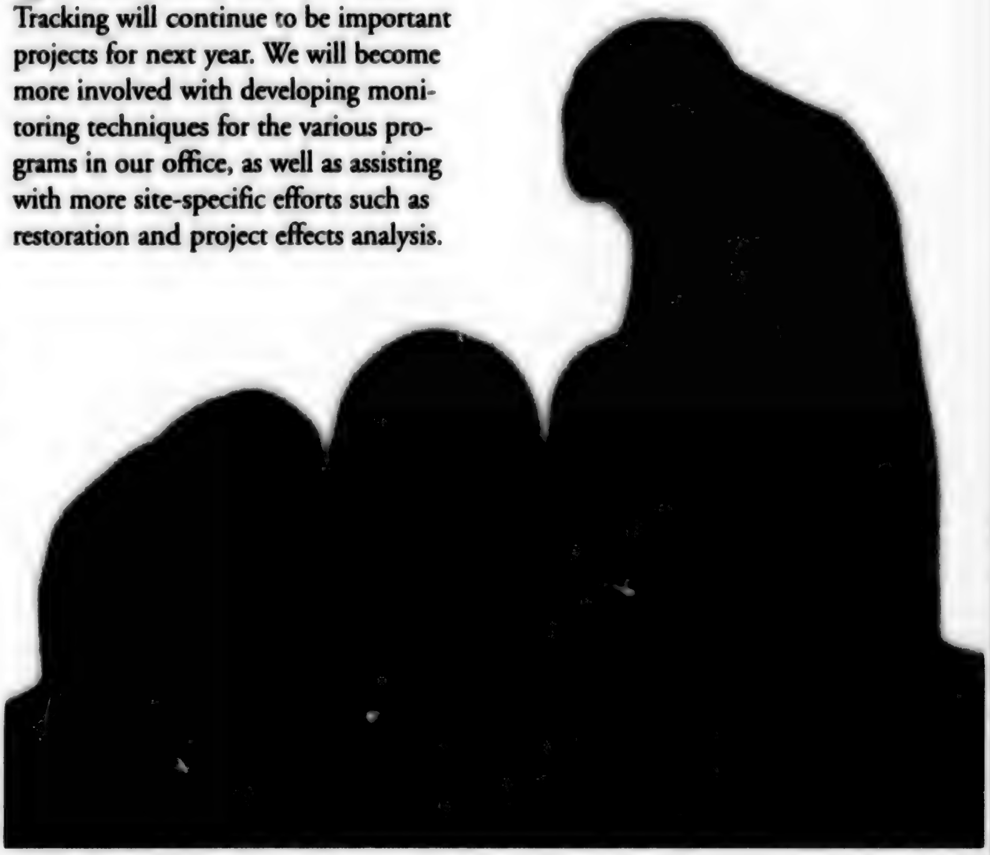
Following the current ***ESA*** listings of Pacific salmon, the Division's role has become increasingly complex. The hatcheries we work with may benefit or undermine wild salmon ***recovery*** depending on how they are used. The current challenge is for hatcheries to provide salmon for harvest while minimizing impacts to wild salmon. This will require ***effectiveness monitoring*** of hatchery production and the development of new tools to manage salmon fisheries.

We will continue to work in the Pacific Salmon Commission's technical groups to improve fishery management tools needed for ***selective fisheries***, and participate in efforts to reform hatchery practices in western Washington to minimize impacts to wild salmon. We will also continue our summer chum salmon supplementation program at the Quilcene National Fish Hatchery and use it to restore this species in the Quilcene River and other suitable Hood Canal streams.

We will continue to be challenged next year on updating our spatial databases, improving access to these databases, developing a remote sensing capability, and furthering the development of modeling and analysis techniques for the ***WWO***.

Bull Trout Analysis, ***HCP Cumulative Effects*** Assessment, and Restoration Tracking will continue to be important projects for next year. We will become more involved with developing monitoring techniques for the various programs in our office, as well as assisting with more site-specific efforts such as restoration and project effects analysis.

This year, the WWO received funding to initiate hatchery reform in western Washington. The overall goals of hatchery reform are to protect genetic resources of hatchery and wild fish; improve survival of hatchery fish; and minimize the negative impacts of hatchery fish on naturally spawning fish populations. State, tribal, and federally-funded hatcheries in western Washington are also involved in this effort. We will work with the Quinault, Quilcene, and Makah National Fish Hatcheries, Olympia Fish Health Center and the Abernathy Fish Technology Center on five projects. These are: re-evaluating the feasibility of passing salmon above each of our hatcheries that have migration barriers; compiling a computer database of our hatchery operations for ESA-compliance purposes; evaluating whether natural rearing will benefit Quinault NFH coho salmon survival; building a web site to share our hatchery database with the public; and developing genetic management plans for our coastal hatcheries.



Sampling for juvenile salmonids

Information, Education and Outreach

The Office of Information, Education and Outreach serves a support function for the rest of the *WWO*. We provide professional expertise in writing and editing, press and public relations, public involvement techniques and meeting facilitation. We develop and implement public outreach plans announcing listing actions, Federal Register Notices and other significant *FWS* actions or activities. We write the press releases, fact sheets and question-and-answer sheets that help the public and the media better understand *FWS* actions and policies. We produce informational reports, brochures, pamphlets, displays and videos to support managers and field staff in their communications efforts to explain the functions and efforts of the *WWO*.

We deal extensively with the media, local, regional and national, in the coverage, and generation of coverage, of *FWS*-related events and activities.

Seattle is the 12th largest media market in the United States and Portland is the 20th. Located directly between the two metropolitan areas and halfway along the urbanized I-5 corridor that supports them, we have extensive contact with media from both cities. We enjoy a close and productive working relationship with the Seattle Times, Seattle Post-Intelligencer and other Seattle-area print media. We also work closely with newspapers like the Tacoma News Tribune, Daily Olympian and Vancouver Columbian that cover areas and readerships between the two larger media markets. In Portland, we enjoy a good relationship with reporters from the Oregonian and other Portland-area print outlets.

Our ability, unique among *FWS* field offices, to generate professional quality video and audio through our Western Washington Broadcast Media Center, allows us to have a close working relationship with both national and regional electronic media. We regularly receive requests for *FWS*-related video or audio from CNN, NBC, CBS, TBS and even National Public Radio. Due to our extensive video library of fish and wildlife, and related activities, we have been able to provide professional-quality video or audio to fulfill most of these requests. We also enjoy an excellent relationship with the electronic media in Seattle and Portland.

Professional cameras and video production equipment in the Broadcast Media Center

Although we regularly contact television reporters with story ideas, the budget realities and intense competition for news in these markets sometimes preclude reporting teams from traveling to the distant locations where *FWS* activities are often located. This sometimes prevents them from recording stories they would otherwise have covered. In some cases, we are able to use our video production expertise — two members of our staff are former television news professionals — to provide interested stations with unedited video and accompanying audio to encourage the stations to edit the material into their own report for broadcast. This saves the stations time and money and allows them to cover more news events, while it helps us gain coverage of *FWS*-related stories that might not otherwise have reached the public.

In 1999, we began nurturing a relationship with national and regional sporting and outdoors magazines. Although this is a medium that would seem to be a natural for the *FWS*, we have historically had limited success developing a productive relationship with this outlet. This year, we were able to establish contact with Outdoor Life and place several short articles in their regional section. We hope to continue and improve this relationship in the future. We were also successful, during 1999, in placing articles about *WWO* activities in the *FWS* publications Endangered Species Bulletin, Fish and Wildlife Service News, and Out and About, the Region 1 outreach newsletter.

Although we work regularly with national media outlets and weekly with the regional media, we work almost daily with the smaller, local newspaper and radio outlets that cover many of the outlying districts where our biological staff does most of their work. This accessibility to, and familiarity with, local media outlets helps us to help the public better understand *FWS* policies, actions and activities, and to keep in touch with local communities and community events. These contacts often help us respond proactively to ensure that local communities have the most accurate, up-to-date information about wildlife-related incidents or activities, often circumventing misinformation or misunderstandings that might otherwise occur.

For instance, during 1999, we were heavily involved in researching, developing and providing accurate information to the media and public about *FWS* activities — and those of other involved agencies and entities — about the Congressionally-directed investigation of the feasibility of reintroducing gray wolves to the Olympic Peninsula. During this effort we co-chaired, with the National Park Service, the Information and Education Subcommittee created to provide the public and press with accurate information about the project.

Interest in wolves flared up again months later when, in two separate incidents, significant numbers of wolf-hybrids were released into the wild as a result of the inability of their owners to care for them. Although these animals are not technically the concern of the *FWS*, public perception of them as "wolves" prompted us to work closely with local, state and federal agencies who were directly involved but lacked professional outreach staffs to help them explain to the media and the public what was being done to solve the problem. We also used the opportunity to acquaint the public with the differences between wild wolves and domestically-raised hybrids and the dangers they pose to both people and wild wolves.

We perform similar functions for the North Cascades Grizzly Bear Management Subcommittee, the inter-agency group charged with the management of grizzly bear *recovery* in Washington's North Cascades. We have chaired the interagency Information and Education Subcommittee since its creation in 1991 and continue to serve as the clearinghouse for information about grizzly bears in the North Cascades. We also work closely with grizzly bear *recovery* efforts in other areas, serving as a member of the Interagency Grizzly Bear Committee (IGBC) Information and Education Subcommittee.

But the Western Washington Office of Information, Education and Outreach is more than a media-relations shop. In 1999 we provided support for a Regional Office briefing of a touring Congressional subcommittee, produced a report on the relationship of the *FWS* and the *WWO* to salmon *recovery* efforts, and produced the *WWO* Accomplishments Report.

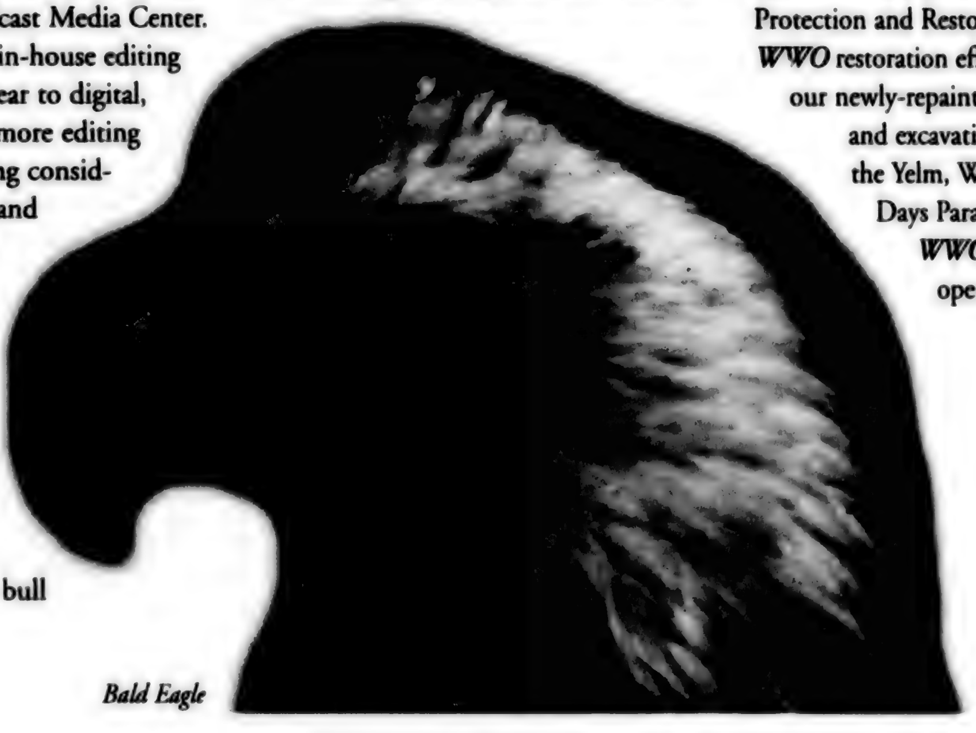
Gray wolf

Peregrine Falcon

We also conducted an office-wide training session on media relations, carried out many private coaching sessions and provided guidance for biological staff facing media interviews, and taught a college class for prospective fish and wildlife biologists on a similar topic.

At least one in-house media relations training session has already been scheduled for 2000.

This was a big year for our Western Washington Broadcast Media Center. We converted our in-house editing capability from linear to digital, allowing us much more editing flexibility and saving considerable future time and money during the editing process. We also acquired a digital mini-camera complete with waterproof housing that will allow us to gain underwater video footage of salmon, bull trout and other aquatic species. We also acquired a photographic slide scanner which will greatly enhance our ability to create and maintain an electronic image library to aid in the creation of publications, slide shows, PowerPoint presentations and other visual aids.



Bald Eagle

We chose our cataloging software to be compatible with the *FWS* National Conservation Training Center so we can continue to provide them with both still and video images upon request.

Our *WWO* Broadcast Media Center also serves as a regional and national resource on a time-available basis. In 1999 our videographer was successful in capturing video of coyote predation on pronghorn fawns at Hart Mountain NWR, sage grouse in eastern Washington and bats and songbirds in Texas.

We work closely with the *WWO* Technology Support Team on development of the *WWO* web site. We have been successful in placing streaming video and accompanying audio of species like the peregrine falcon, Canada lynx and others on the web site for viewing by the public. We have also provided considerable video support to the Region 1 web site and the National *FWS* web site during several high-visibility outreach efforts. We expect to greatly increase our web capabilities during 2000.

This year we hosted a 25th Birthday Celebration for the ***Endangered Species Act***. The celebration included an awards ceremony, *ESA*-related music and art, and performances by local actors and school children of *ESA*-related plays. It also featured thought-provoking presentations by *FWS* management personnel, conservation organizations and industry representatives.

Each spring we work cooperatively with local nonprofit conservation groups to help produce the annual Procession of the Species. This one-day art event celebrating the *ESA* regularly draws thousands of participants and viewers as it winds through downtown Olympia. In the half-dozen years since its inception, the Procession has grown from a few dozen participants to a major annual cultural event.

Another outreach event that was a great hit with the public was our cooperative effort with the Division of Watershed Protection and Restoration to publicize *WWO* restoration efforts by placing our newly-repainted dump truck and excavation equipment in the Yelm, Washington, Prarie Days Parade. Driven by *WWO* heavy equipment operator Allen Gray, and loaded with the typical root wads and willow saplings of a restoration project, the bright red, flag-bedecked 14-yard dump truck slowly towed a trailer of excavation equipment through the crowd while two staff members handed out informational brochures about *WWO* restoration programs.

We also cooperate regularly with local zoos, aquariums, wildlife parks and non-governmental conservation organizations to provide educational and informational presentations upon request. In 1999 we provided presentations to Wolfhaven International, Defenders of Wildlife, the Northwest Wolf Information Network, Long Live the Kings (a salmon restoration group), NWTREK, the Point Defiance Zoo and Aquarium, the Seattle Aquarium and the Woodland Park Zoo in Seattle.

At the Western Washington Office, education and outreach are not restricted to the Office of Information, Education and Outreach. Every member of the staff realizes the importance of helping the public and our partners better understand the mission and efforts of the *FWS*.

During 1999, programs within the WWO carried out a number of outreach and education activities:

- We published or have scheduled for publication in The ***Endangered Species*** Technical Bulletin, three articles on forest HCPs: A Case Study; Multi-species ***Habitat Conservation Plans***; Experiments in Ecosystem Management; and "Islands of Habitat in an Agricultural Sea."

- We scheduled and held a day-long tour for Secretary of the Interior Bruce Babbitt to assess the progress the Forest Industry has made in the Pacific Northwest during the last six years.

- We made educational presentations to elementary school students and Scout troops, spoke as guest lecturers at area high schools, colleges, zoos and wildlife parks.

- We were called on by local education professionals to conduct environmental education about fish, wildlife, and the *ESA*. We developed curricula and provided technical assistance in the education and interpretation of the *ESA*.

- To help educate current and future anglers, we designed two outreach programs, one aimed at children and the other at adults who are currently anglers.

- During 1999, members of the *WWO* staff carried out several significant training efforts. Training, both inhouse and with our partners, is another form of outreach that helps us help others better understand our work. We believe our efforts to increase the number of people trained in the nuances of conservation planning will ultimately increase conservation efforts across the landscape, furthering our mission of conserving, protecting and enhancing fish and and wildlife, and their habitats for the continuing benefit of the American people.

- The recent listings of salmon and bull trout under the *ESA* have prompted a tremendous increase in ***section 7 consultations*** for both the *FWS* and the *NMFS*. In response to the overwhelming need for guidance, *WWO* staff have cooperatively developed and presented, with *NMFS*, many one-day training programs for local governments, consutants and industry representatives in western Washington. These workshops provide an introduction to the *ESA*, the ***section 7 consultation*** process, ***biological assessment*** preparation, and bull trout habitat requirements. The events are well-attended, and provide an excellent opportunity for both agencies to give consistent guidance and respond to questions in a clear, coordinated manner. Responses have been highly favorable, and additional workshops are planned for the coming year.

- We cooperated with the *FWS* Oregon State Office and Region 1 Office staff in conducting a two-day *HCP* training class for *FWS* staff in Moses Lake, Washington.

- We hosted, and provided the majority of the instruction for, the National Conservation Training Center's course on ***Habitat Conservation Planning*** for ***Endangered Species***. To support the class, we arranged for guest speakers and a field trip to industrial timberlands operating under an *HCP*. This class included *FWS* staff from around the nation, and had the largest participation of non-*FWS* staff to date.

- We hosted a free, one-week *HCP* class for interested members of the public. The class featured three guest speakers from the private sector and was attended by over 30 private-sector biologists and managers, as well as tribal and state fish and wildlife agency staff.

- We initiated and organized a training workshop on transportation corridors and their effects on wildlife, coordinated closely with staff from the Washington and Oregon Departments of Transportation.

- We participated in a panel presentation and discussion on *NMFS* and *FWS* working relationships and coordination at the National *HCP* Workshop, held in San Rafael, California.

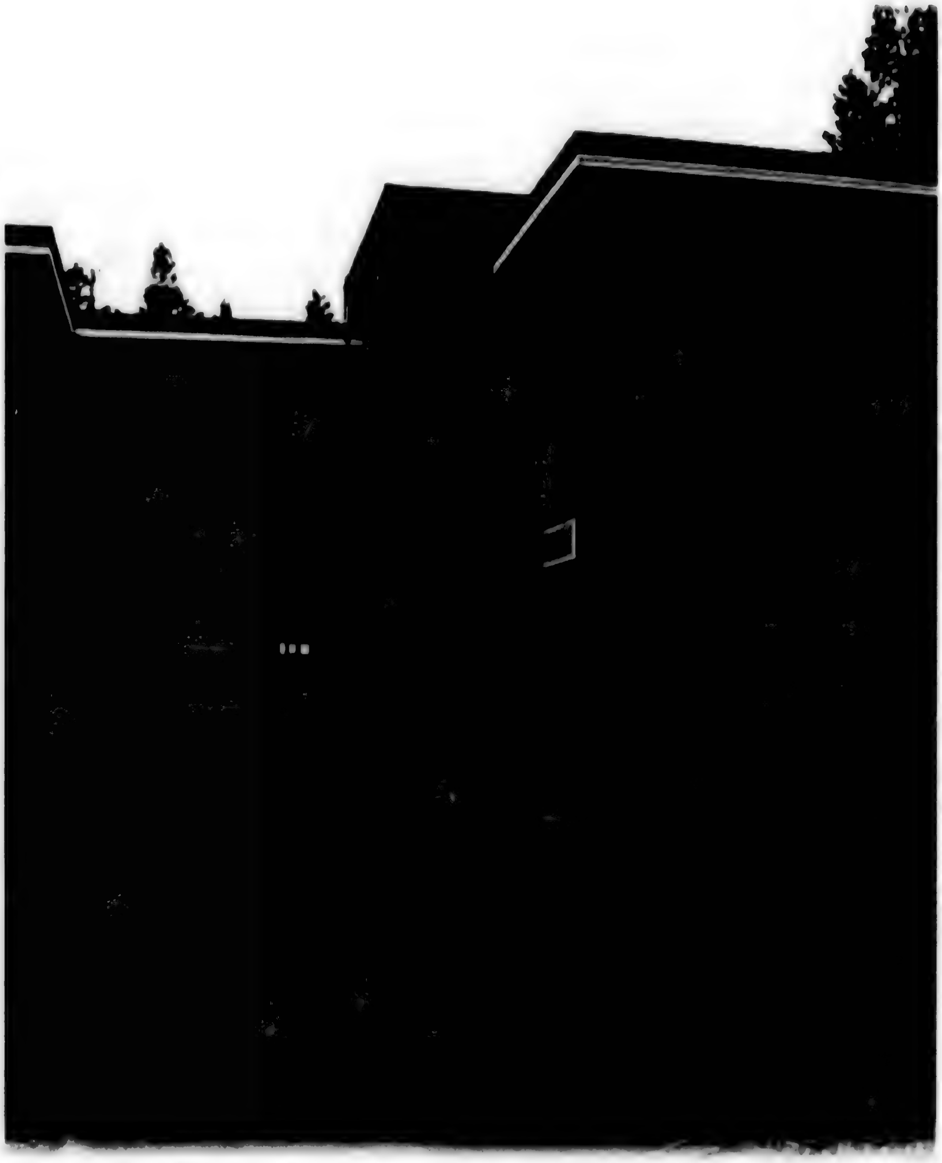
Challenges: FY2000 and Beyond

The next few years will bring many challenges to the *WWO* Information, Education and Outreach staff. We hope to improve and increase our professional contact with the outdoor and sporting magazine press, increase our contact with regional and national news media, develop our ability to provide aquatic species video using our new underwater capability and expand our relationship with local and regional radio outlets.

We are also planning a series of educational efforts including a joint effort with federal, state and local agencies and non-governmental groups to present several "Living With Carnivores" workshops in Washington. These day-long workshops will be collaborative efforts between federal, state and local agencies, supported by non-governmental conservation organizations, private businesses and nonprofit organizations, to provide the public with accurate information on how to avoid contact and minimize conflicts with these species in areas of Washington where large predators are found.

We hope to augment existing bull trout identification and education programs through a proposal to create a multi-agency, multi-state cooperative effort to develop simple, consistent educational messages and products to assist all the federal, state, local and tribal agencies in helping the public develop the ability to identify bull trout at the streambank.

We are also developing an informational video describing the restoration efforts of the *WWO* Division of Watershed Protection and Restoration. Eventually, we hope to have a video describing the efforts of each division.



The Western Washington Office

> *We believe that, given good information, the public will make good choices about preserving their natural resource heritage. It's our job to see that they get good information.*

We hope these informational videos will help the public, our partners and the media better understand the comprehensive and interlocking efforts of the Western Washington Office.

The Western Washington Office of Information, Education and Outreach is one of the more comprehensive operations of its type in the *FWS*. Our use of cutting-edge technology and multimedia skills and equipment helps us reach a broader segment of the public every year.

We believe that given good information, the public will make informed choices about preserving their natural resource heritage. It's our job to see that they get accurate and high-quality information.

We look forward to continuing our work with new resources to face new challenges. As one staff member often says, "the best thing about our job is the unlimited possibilities."

GLOSSARY

Adaptive Management - A type of management where monitoring and evaluation results can adjust future managment actions. It involves continual learning over time to test hypotheses via management experimentation which, together with management flexability, will improve the ability to achieve stated management goals.

Anadromous - A life history in which fish are born in fresh water, move to the ocean to grow and mature, and return to fresh water to reproduce; an example is chinook salmon *(Oncorhynchus tshawytscha)*.

Avulsion - A rapid shift of a river channel location.

Biological Assessment - An assessment prepared by a federal agency which evaluates the potential effects of an action on listed and proposed species and designated and proposed critical habitat to determine whether any such species or critical habitat will be adversely affected by the proposed action. Biological assessments are required for major construction activities.

Biological Diversity - The variety of life and its processes; it includes the variety of living things, the genetic differences among them, the communities and ecosystems in which they occur and the ecological and evolutionary processes that keep them functioning, yet ever changing and adapting.

Candidate Conservation Agreement with Assurances (CCAA) - A conservation planning option under the Endangered Species Act for non-federal landowners. The conservation standard of precluding or removing the need to list covered species is applied.

Candidate Species - The FWS classifies those species for which the agency has sufficient information to warrant a proposed listing as candidate species, but for which the formal proposal to list under the ESA has not occurred.

Clean Water Act - The Federal Water Pollution Control Act strives to restore and maintain the chemical, physical, and biological integrity of the nation's water. The act sets up a system of water quality standards, discharge limitations and permits.

Conservation Plan - A set of land and species management prescriptions that apply to a specific area, developed for the protection of fish and wildlife species.

Covered Activities - The activities which are addressed by a conservation plan and for which an ESA permit holder can receive assurance that they will not be subject to prohibitions should those activities result in harm to a listed species, or otherwise result in take of a listed species.

Critical Habitat - The specific areas within the geographical area occupied by the species, at the time it is listed which will include the physical and biological features essential to the conservation of the species and which may require special management considerations or protection and may include the specific areas outside the geographical area occupied by the species at the time it is listed, if the Secretary determines that such areas are essential for the conservation of the species.

Cumulative Effects - With respect to the National Environmental Policy Act, cumulative effects are the impacts on the environment which result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions.

Distinct Population Segment - A portion of the overall population of a listed species which is reproductively isolated from other populations of the same species and which represents an important component of the evolutionary legacy of the species.

Diversion Dam - An in-stream structure that facilitates the diversion of water to another location.

Effectiveness Monitoring - Data collection and tracking which determines how well conservation measures are performing and whether they are achieving the desired results.

Endangered Species - A plant or animal species whose numbers are so depleted that the species is in danger of extinction throughout all or significant portions of its range.

Endangered Species Act - A federal act enacted in 1973, designed to conserve the ecosystems on which listed species depend. The Act contains criteria by which plant or animal species can be designated (listed) as threatened or endangered of extinction. Two federal agencies, the Fish and Wildlife Service and the National Marine Fisheries Service, administer the Act. Once species are listed, the Act requires that these agencies develop recovery plans for the species, and take other steps to remove the threats of extinction.

Environmental Impact Statement (EIS) - A document made available for public comment which discusses proposed actions, alternatives, and impacts of proposed actions to the environment. An EIS is required when a federal action is expected to have significant effects on the human environment.

Fish-bearing - Refers to streams that support fish of any kind.

Floodplain - The lowland and relatively flat areas adjoining streams, that are likely to flood during high water.

Forest and Fish Agreement - A negotiated agreement through the Timber, Fish and Wildlife forum that may become state forest practice rules for non-federal forest landowners. The development of this agreement was primarily in response to listings of salmonids under the ESA.

4(d) Rule - Section 4 of the Endangered Species Act allows for the development of special rules relating to threatened species. A 4(d) rule typically provides incidental take allowances in exchange for conservation efforts for a specific threatened species.

GAP Analysis - An evaluation of the protection of biodiversity. This process identifies conservation targets (fish, wildlife, plants, and communities), determines the extent to which these targets are protected, and highlights targets at risk due to inadequacies in current conservation measures.

Habitat Conservation Plan (HCP) - A plan that specifies the activities to be addressed, their impacts, and the conservation measures which will be implemented in exchange for a permit allowing incidental taking of a threatened or endangered species.

Hillshade - "Hillshading" is a visualization tool to display hills and valleys in relief on maps.

Implementation Agreement - An agreement that legally binds a permittee and other parties to the requirements and responsibilities of a Habitat Conservation Plan and associated permit.

Implementation/Compliance Monitoring - This type of monitoring determines if a project was implemented according to the design specifications or other types of requirements, such as a timing restriction which would not allow in-water work when fish are spawning.

Incident Command System - The Incident Command System (ICS) for oil and hazardous substances discharge response is designed to organize and manage responses to incidents involving a number of interested parties in a variety of activities. This system is based on the National Interagency Incident Management System (NIIMS) ICS Manual and is adapted for the particular aspects of oil and hazardous substance discharge.

Incidental Take - Any taking otherwise prohibited by the Endangered Species Act if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Incidental Take Permit - A permit issued by the FWS to either a private entity or a state or local government that allows incidental take of a threatened or endangered species. Permits also require permittees to carry out specified actions that minimize and mitigate the incidental take, and may contribute to the recovery of the species.

Inholdings - Land belonging to a landowner that is surrounded by land of another landowner.

Landscape-level Analysis - Evaluating the environmental condition and needs of species or people at large scales such as a watershed, National Forest, or the Pacific Northwest.

Large Woody Debris - Fallen trees, root wads and large branches that intrude into a stream channel, providing cover and habitat for aquatic species.

Late-successional - The stage in forest development that includes mature and old-growth forests.

Late-Successional Reserve - A land designation category under the NWFP. These conservation areas were identified throughout the NWFP area to protect and enhance conditions of late-successional and old-growth forest ecosystems, which serve as habitat for late-successional and old-growth forest species, including the northern spotted owl.

Late-Successional Reserve Assessment - An assessment consisting of a description of the historic and current vegetative condition and land uses within an LSR, a list of wildlife associated with the LSR, a fire management plan, identification of restoration opportunities, and an implementation and monitoring plan.

Listed Species - Species, including subspecies and distinct vertebrate populations, of fish, wildlife, or plants listed as either endangered or threatened under section 4 of the Endangered Species Act.

Maternity Colonies - Congregations of female bats with their young.

Memorandum of Agreement - A formally accepted agreement between two or more parties describing how each party will perform their responsibilities associated with a collaborative plan.

Mitigation - Conservation efforts to reduce or overcome environmental impacts from human activities. For instance, buffers are often used to reduce the impacts of timber harvest on sensitive areas; while conservation reserves are generally established to compensate for the impact of development.

National Environmental Policy Act (NEPA) - The National Environmental Policy Act of 1969, as amended, requires federal agencies to consider alternatives to actions which may result in significant effects to the human environment. NEPA also requires agencies to make information available to the public, who may play a role in the agencies decision-making.

Nationwide 404 permits - Permits issued by the U.S. Army Corps of Engineers, under Section 404 of the Clean Water Act, for minor structures, fills, and other alternations in wetlands and other water bodies. Nationwide permits are intended to simplify and accelerate the permit process for small projects that are expected to have only minor individual or cumulative impacts.

Natural Resource Damage Assessment (NRDA) and Restoration - NRDA utilizes "the polluter pays" concept where parties potentially responsible for injuring natural resources from a discharge of oil or hazardous substance restore the public's natural resources to their pre-spill conditions. A NRDA involves the processes of collecting, compiling, and analyzing information with the purpose of calculating monetary damages (monetary value of restoration) for injuries (harm, adverse impacts, loss) to natural resources. NRDAs are not intended to support response or remedial activities, but to supplement them by providing compensation to the public for injury to natural resources as a result of an oil discharge or release of a hazardous substance. Injury is defined as 1) a measurable adverse change, either short- or long-term, in the chemical or physical quality or the viability of a natural resource or 2) impairment of a service provided by a resource relative to a baseline condition resulting either directly or indirectly from exposure to a release of oil or hazardous substance. Trustee agencies use the funds obtained as a result of a damage claim to restore the injured natural resources. Frequently the formal damage assessment process is circumvented as a result of settlement offers from potentially responsible parties and the possibility of negotiated settlements. Often, parties potentially responsible for injuring natural resources will conduct direct restoration or in-kind services in lieu of monetary compensation to restore the injured resources.

Non-point Source Pollution - Pollution from a number of unspecified locations, cumulatively resulting in degraded water quality.

Northwest Forest Plan - A comprehensive ecosystem-management plan designed to maintain a healthy forest ecosystem with habitat that will support populations of native species (particularly those associated with late-successional and old-growth forests), including protection for riparian areas and watersheds; and maintain a stable supply of timber and other forest products that will help maintain the stability of local and regional economies on a predictable and long-term basis. The NWFP applies to lands administered by the U.S. Forest Service and U.S. Department of Interior Bureau of Land Management within the range of the northern spotted owl (primarily the western portions of Washington, Oregon, and northern California).

Notice of Intent - An announcement published in the Federal Register by a federal agency which provides general information on an action. A Notice of Intent usually proceeds a more detailed proposal.

Oil Dispersant - A chemical that is put on a large quantity of spilled oil to disperse it into the water column. It works much the way dishwashing liquid disperses cooking oil.

Old-growth - A forest stand with moderate-to-high canopy closure; a multi-layered, multi-species canopy dominated by large over-story trees; a high incidence of live trees with large, broken tops, and other indications of decadence; numerous large snags; and heavy accumulations of large woody debris on the ground.

Potentially Responsible Parties as defined under NRDA - Any individual(s) or company(ies) such as owners, transporters, or generators, potentially responsible for, or contributing to, the contamination problems resulting from a release of oil or hazardous substance.

Programmatic Consultation - A consultation document prepared under the Endangered Species Act which addresses multiple actions (programs of work) for multiple years to preclude the need to consult on every action individually.

Proposed Species - A species for which the FWS has sufficient information to warrant listing as threatened or endangered under the Endangered Species Act, and for which a formal proposal has occurred.

Provincial-level Analysis - A landscape-level analysis typically conducted on federal and non-federal lands on a designated Province. Maps of provinces within the range of the spotted owl are located in the NWFP Record of Decision on pages A-3 and E-19. There are five Provinces in Washington. For example, the Olympic Penninsula comprises one Province.

Record of Decision (ROD) - Documentation of an agency decision following an alternatives analysis in an Environmental Impact Statement.

Recovery - The process of bringing a listed species to the point where protection under the ESA is no longer necessary.

Regulatory Assurances - Assurances provided to a permit holder that the FWS will not require additional measures beyond those agreed to in the permit and supporting conservation plan, except in cases when an endangered or threatened species is in jeopardy of extinction and all other remedies have been exhausted.

Riparian - That portion of the watershed or shoreline influenced by surface or subsurface waters, including stream or lake margins, marshes, drainage courses, springs, and seeps.

Safe Harbor Agreement - A planning option under the Endangered Species Act which provides incentives for private and other non-Federal property owners to restore, enhance, or maintain habitats for listed species, which are not currently found on their ownership in exchange for incidental take that may occur in the future should a listed species occupy the property. Incidental take must not exceed the agreed upon baseline conditions.

Salmonid - A member of the fish family Salmonidae that includes all species of salmon, trout, char, and whitefish.

Scoping - The process of determining the nature and extent of a project or analysis.

Section 7 Consultation - Section 7 of the ESA requires federal agencies to consult with the FWS and the National Marine Fisheries Service on actions that many affect listed species and that are authorized, funded, or carried out by such agencies. The ESA prohibits any federal agency from carrying out any action that is likely to jeopardize the continued existence of any listed species. The consultation process analyzes the actions and their impacts to ensure that no species is jeopardized.

Sediment - Material such as sand and silt deposited by water flows.

Selective Fisheries - Selective harvesting of hatchery fish that have their adipose fins removed so fisheries can identify them as hatchery releases.

Spotted Owl Dispersal Habitat - All forested stands capable of providing sufficient cover and space to allow spotted owls to fly safely from one location to another. On a landscape basis, dispersing owls require some patches of foraging and roosting habitat.

Spruce Budworm - A native insect of coniferous forests which can cause defoliation and death of affected trees when population levels are elevated. The spruce budworm is the larval stage of a small, orange-brown, mottled moth of the genus Choristoneura.

State Forest Practices Act - A law which regulates forest management and timber harvest in the State of Washington.

Subpopulation - Subpopulations are reproductively isolated portions of populations. For instance, for bull trout, subpopulations are delineated primarily by watersheds of 20,000 to 200,000 acres, which for the Coastal Puget Sound Distinct Population segment of bull trout are currently Washington Administrative Units (WAU) boundaries and are based on best available data.

Take - Defined under section 3(18) of the Endangered Species Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct," with respect to federally–listed endangered species of wildlife. FWS regulations provide the same take prohibitions for threatened wildlife species.

Terrestrial Species - Species which grow or live on land, as opposed to aquatic species which grow or live in water. Birds, mammals, and reptiles are generally considered terrestrial species.

Threatened Species - A plant or animal species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Timber, Fish and Wildlife (TFW) Forum - A forum composed of representatives from federal and state natural resource agencies, the timber industry, Indian tribes, non-industrial land owners, and environmental organizations in Washington. The forum provides for interaction between the member groups on issues relating to commercial timber harvest, and the needs of fish and wildlife, and their habitat.

Trustees as defined under NRDA - The President of the United States designated the Secretary of the Interior as the Federal Trustee, along with the Secretaries of the Departments of Energy, Commerce, Defense, and Agriculture. These agencies act as natural resource trustees on behalf of the public for resources that fall under their purview. Trustees also include state governments, and tribes that hold treaty rights. The FWS' trust resources under the DOI include migratory birds, federally-listed species, some anadromous fishes, some marine mammals, and FWS lands.

Trust Resources as defined under NRDA - The land, fish, wildlife, biota, air, water, groundwater, drinking water, endangered or threatened species, migratory birds, waterfowl, anadromous fish, their habitats and other resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States, any state, or local government, Indian tribe or foreign government.

Unlisted Species - Fish, wildlife or plant species not currently listed as threatened or endangered under the Endangered Species Acts.

Validation Monitoring - Data collection an analysis which is used to test the results of modeling, but can also be used to test the validity of hypotheses or assumptions.

Washington Administrative Code - Following the passage of a state law or act, which is recorded in the Regulatory Code of Washington, the state agencies develop regulations which are published as the Washington Administrative Code.

Watershed Analysis - A procedure for characterizing a watershed and its ecological processes; watershed analyses provide a basis for ecosystem management planning that is applied to watersheds of 20 to 200 square miles in size under the NWFP.

Watershed Resource Inventory Areas (WRIAs) - Washington State has been divided up into 62 WRIAs each encompassing a land area comprised of a discrete watershed. The boundaries of each of the individual WRIAs were developed and accepted by a committee composed of representatives of the various state agencies dealing with natural resources. The WRIA system has been used within Washington State since the early 1970's.

Watershed Restoration - Active management designed to improve watershed conditions such as removing roads, improving culverts to allow flows and fish migration, restoring woody debris to streams, etc.

Wildlife Corridor - An area of sufficient size, security and suitable habitat conditions to allow wildlife to migrate from one location to another.

GLOSSARY of ACRONYMS

BIA - Bureau of Indian Affairs

BPA - Bonneville Power Administration

CFRP - Chehalis Fisheries Restoration Program

DNR - Department of Natural Resources (Washington)

ESA - Endangered Species Act

FERC - Federal Energy Regulatory Commission

HCP - Habitat Conservation Plan

HPA - Hydraulic Project Application

LSR - Late-Successional Reserve

MOA - Memorandum of Agreement

NEPA - National Environmental Policy Act

NMFS - National Marine Fisheries Service

NOAA - National Oceanic and Atmospheric Administration

NRDA - Natural Resource Damage Assessment

NWFP - Northwest Forest Plan

SEIS - Supplemental Environmental Impact Statement

TFW - Timber, Fish and Wildlife

FWS - Fish and Wildlife Service

WDFW - Washington Department of Fish and Wildlife

WSECP - Washington State Ecosystems Conservation Program

WWO - Western Washington Office

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END

06-19-01